

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

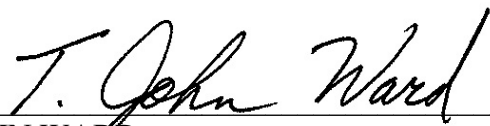
REMBRANDT TECHNOLOGIES, LP	§	
Vs.	§	CIVIL ACTION NO. 2:05CV443
COMCAST CORP., ET AL.	§	

ORDER

The plaintiff's first motion to compel (#59) is denied as moot.

The unopposed motion for leave to exceed page limits (#65) is granted.

SIGNED this 30th day of March, 2007.



T. JOHN WARD
UNITED STATES DISTRICT JUDGE

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP	§	
	§	
Plaintiff,	§	
	§	
vs.	§	Case No. 2:05-CV-00443-TJW
	§	
COMCAST CORPORATION;	§	JURY TRIAL REQUESTED
COMCAST CABLE	§	
COMMUNICATIONS, LLC; AND	§	
COMCAST OF PLANO, LP,	§	
	§	
Defendants.	§	

**JOINT STIPULATION AND ORDER
TO AMEND
THE AMENDED PROTECTIVE ORDER**

Plaintiff Rembrandt Technologies, LP (“Rembrandt”) and Defendants Comcast Corporation, Comcast Cable Communications, LLC, and Comcast of Plano, LP, pursuant to paragraph 24 of the Court’s Amended Protective Order (Docket No. 115), hereby stipulate and jointly request that **paragraph 4(h)** of the Amended Protective Order be amended as follows:

1. that Fish & Richardson P.C., 225 Franklin Street, Boston, MA 02110 be deleted from the list of outside counsel for Rembrandt and
2. that McKool Smith P.C., 300 Crescent Court, Suite 1500, Dallas, Texas 75201 be added to the list of outside counsel for Rembrandt.

Dated: March 8, 2007

SO STIPULATED:

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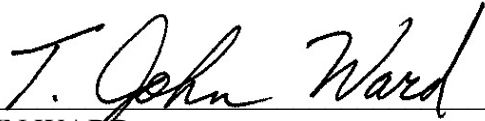
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ATTORNEYS FOR PLAINTIFF
REMBRANDT TECHNOLOGIES, LP

IT IS SO ORDERED.

SIGNED this 2nd day of April, 2007.



T. JOHN WARD
UNITED STATES DISTRICT JUDGE

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP)

Plaintiff,)

v.)

COMCAST CORPORATION, COMCAST
CABLE COMMUNICATIONS, LLC,
COMCAST OF PLANO, LP)

Defendants.)

Case No. 2:05-CV-443-TJW

REMBRANDT TECHNOLOGIES, LP)

Plaintiff,)

v.)

COMCAST CORPORATION, COMCAST
CABLE COMMUNICATIONS, LLC
COMCAST OF PLANO, LP)

Defendants.)

Case No. 2:06-CV-506-TJW

REMBRANDT TECHNOLOGIES, LP)

Plaintiff,)

v.)

SHARP CORPORATION and SHARP
ELECTRONICS CORP.)

Defendants.)

Case No. 2:06-CV-047-TJW

REMBRANDT TECHNOLOGIES, LP)

Plaintiff,)

v.)

TIME WARNER CABLE, INC.)

Defendant.)

Case No. 2:06-CV-369-TJW

REMBRANDT TECHNOLOGIES, LP)

Plaintiff,)

v.)

TIME WARNER CABLE, INC.)

Defendant.)

Case No. 2:06-CV-224-TJW

REMBRANDT TECHNOLOGIES, LP)

Plaintiff,)

v.)

CHARTER COMMUNICATIONS, INC.,)
CHARTER COMMUNICATIONS)
OPERATING, LLC, COXCOM INC., CSC)
HOLDINGS, INC., and CABLEVISION)
SYSTEMS CORPORATION)

Defendants.)

Case No. 2:06-CV-507-TJW

REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:06-CV-223-TJW
)	
CHARTER COMMUNICATIONS, INC.,)	
CHARTER COMMUNICATIONS)	
OPERATING LLC, COXCOM, INC., CSC)	
HOLDINGS, INC., and CABLEVISION)	
SYSTEMS CORPORATION)	
)	
Defendants.)	
_____)	

NOTICE OF FILING OPPOSITION TO COXCOM'S
MOTION FOR TRANSFER AND CONSOLIDATION OF
REMBRANDT TECHNOLOGIES, LP PATENT LITIGATION

Rembrandt Technologies, LP (Rembrandt) notifies the Court that it has opposed CoxCom's Motion for Transfer and Consolidation Pursuant to 28 U.S.C. §1407. Enclosed with this Notice are copies of the opposition and all documents in support thereof.

DATED: April 5, 2007

Respectfully submitted,

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**ATTORNEYS FOR PLAINTIFF
REMBRANDT TECHNOLOGIES, LP**

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). As such, this document was served on all counsel who have consented to electronic service. Local Rule CV-5(a)(3)(A). Pursuant to Fed. R. Civ. P. 5(d) and Local Rule CV-5(e), all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by U.S. mail, on this the 5th day of April, 2007.

/s/ Sam Baxter
Sam Baxter

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re:)	
Rembrandt Technologies, LP Patent	)	MDL Docket No. 1848
Litigation	)	In re: Rembrandt Technologies, LP
	)	Patent Litigation
)	
	)	ORAL ARGUMENT REQUESTED

REASONS WHY ORAL ARGUMENT SHOULD BE HEARD

Pursuant to Rule 16.1(b), Rembrandt Technologies, LP (Rembrandt) files this statement explaining why oral argument should be heard in opposition to CoxCom's Motion for Transfer and Consolidation.

In its effort to transfer the New York and Texas cases to Delaware for MDL Consolidation, CoxCom has inaccurately described the Rembrandt litigations. Rembrandt respectfully submits that, when accurately understood, given the very different procedural postures of the cases, different patents, and different defendants who are competitors, coordination of the common issues can best be accomplished under the existing structure rather than through MDL consolidation. *In re Eli Lilly and Company (Cephalexin Monohydrate) Patent Litigation*, 446 F. Supp. 242, 244 (J.P.M.L. 1978) (holding that "consultation and cooperation among the three concerned district courts, if deemed appropriate by those courts, coupled with the cooperation of the parties, would be sufficient to minimize the possibility of conflicting pretrial rulings.").

A clearer understanding of the pending litigation, wherein the fourteen actions are already logically grouped and proceeding with coordinated schedules where possible, will assist the Panel in clarifying the confusion present in CoxCom's motion.

Oral argument will also allow the parties to present the Panel current information regarding the status of the actions at issue, most notably Rembrandt's first-filed case: *Rembrandt v. Comcast Corporation, Comcast Cable Communications, LLC, Comcast of Plano, LP*, 2:06-cv-443-TJW (E.D. Tex.) (*Comcast I*). In *Comcast I*, filed in 2005, discovery is drawing to a close, claim construction has been fully briefed, and trial is likely to occur before the end of 2007. Since the outcome of the *Comcast I* litigation may moot part or all of eight other cases involving the patents asserted in *Comcast*, the status of this case is especially important.

Dated: April 4, 2007

Respectfully submitted,

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Attorneys for Rembrandt Technologies, LP

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re:)	
)	
Rembrandt Technologies, LP Patent	)	MDL Docket No. 1848
Litigation	)	In re: Rembrandt Technologies, LP
_____	)	Patent Litigation

RESPONSE TO COXCOM'S MOTION FOR TRANSFER AND CONSOLIDATION

Pursuant to Rule 7.1(b) of the Rules of Procedure of the Judicial Panel on Multidistrict Litigation, Rembrandt Technologies, LP (Rembrandt) responds to the numbered averments set forth in CoxCom's motion. All allegations not expressly admitted are denied.

1. Admitted in part, denied in part. Rembrandt admits that it filed ten of the fourteen actions during the past seven months. Rembrandt admits that it asserted claims against eleven (11) corporations and their related corporate entities for a total of twenty-nine defendants. Admitted that CoxCom seeks transfer and consolidation of fourteen proceedings. At the same time, however, CoxCom argues that claims from nine of these proceedings should be immediately severed from any consolidated action.

2. No response to this paragraph is required.

3. The first sentence of paragraph 3 is admitted, and it is admitted that Rembrandt

acquires patents and has sued entities it believes infringes those patents. The second sentence of paragraph 3 is denied.

4. Denied as stated. Rembrandt initiated thirteen patent cases that are logically grouped as filed and related to different technology, services, and offerings provided by various defendants. It is admitted that the ATSC Digital Television Standard is relevant to some of the cases and that the DOCSIS specification is relevant to some of the cases.

5. Denied in part, admitted in part. Rembrandt initiated the following groups of patent litigation. Group I involves four patents asserted in three actions in the Eastern District of Texas (against Comcast, Charter, CoxCom, and Time Warner). Rembrandt filed suit against Cablevision in the District of Delaware on the same four patents, and Rembrandt also filed suit against Sharp, a television manufacturer, in the Eastern District of Texas on one of the Group I patents (the '627). Group II involves five patents asserted against the same defendants involved in Group I in the Eastern District of Texas (Comcast, Charter, CoxCom, and Time Warner). Rembrandt also filed suit on some of the Group II patents against Adelphia in the Southern District of New York due to particular circumstances of Adelphia's bankruptcy. Group III involves a single patent, the '627, asserted against broadcasters (ABC, CBS, NBC, and Fox), defendants not involved in the Group I or II litigation. CoxCom itself argues that claims involving the '627 patent should be severed from any consolidated proceeding. Separately, CoxCom filed an improper declaratory judgment action against Rembrandt with respect to one of the Group II patents that is the subject of a motion to dismiss. Admitted that separate claims in the '627 patent relate to transmission (the cases against the broadcaster defendants) and reception (the cases against the cable company defendants and Sharp) of digital television signals. The other cases claim infringement by each of the cable company defendants to the extent their services and their use of equipment (not limited to DOCSIS-

complaint modems) infringe each of the particular patents asserted against them.

6. Rembrandt incorporates and realleges its response to paragraph 5.

7. Rembrandt incorporates and realleges its response to paragraph 5.

8. Denied. Judge Ward held scheduling conferences and set pretrial and trial deadlines in five cases. In addition, Judge Ward ruled on a motion to intervene and a motion to disqualify counsel. The *Comcast I* claim construction issues have been fully briefed by the parties and await hearing.

9. Admitted.

10. Denied. Rembrandt incorporates and realleges its responses to paragraph 5. Rembrandt's infringement contentions will not be identical in all fourteen actions that are the subject of CoxCom's motion. Rembrandt cannot comment on the defendants' non-infringement positions and whether they will overlap.

11. Denied. Paragraph 11 states a conclusion of law to which no response is required. To the extent that this paragraph states allegations as to which a response is required, Rembrandt incorporates and realleges its response to paragraph 5 and its brief in opposition to CoxCom's motion to transfer and consolidate.

12. Denied. Rembrandt cannot respond to this averment because the term "overlapping patents" is vague. Except within a particular group of cases, Rembrandt has not asserted patents belonging to the same family or depending from the same patent application. Rembrandt incorporates its brief in opposition to CoxCom's motion to transfer and consolidate.

13. Denied. Rembrandt incorporates its responses to paragraphs 6 and 7. Absent a defendant's deliberate decision to require duplicative discovery of a defendant or third party, Rembrandt does not expect to take duplicative or burdensome discovery.

14. Denied. Rembrandt incorporates its responses to paragraphs 6 and 7. Rembrandt is entitled to damages (not limited to a reasonable royalty) for each patent infringed, and damage awards must be supported by sufficient evidence. *The Georgia-Pacific* factors require analysis of the unique circumstances of each defendant infringer in addition to analysis of Rembrandt and the patents-in-suit. Section 1407 consolidation and transfer is irrelevant to what damages will be received at trial because consolidation and transfer implicate pretrial proceedings.

15. Denied. Of the actions at issue in CoxCom's motion, only six are pending before Judge Sleet in the District of Delaware. Judge Sleet stayed each of these cases before conducting a scheduling conference. Rembrandt incorporates its responses to paragraphs 6 and 7. Moreover, Rembrandt moved to dismiss CoxCom's declaratory judgment action for lack of jurisdiction. Additionally, CoxCom itself argues that all or part of nine of the fourteen actions should be immediately severed from any consolidated proceeding, thus undermining any alleged benefit to centralization.

16. Rembrandt admits the first sentence of paragraph 16. Rembrandt denies that Judge Sleet indicated an interest in coordinating the six actions pending in Delaware. *Sua sponte*, Judge Sleet entered an order staying all of the actions pending before him and did so before holding a scheduling conference in any Rembrandt litigation.

17. Denied. Consolidation and transfer are inappropriate as centralization would not serve the interests of the parties, witnesses, or judiciary nor would it aid in the efficient or just resolution of the cases in question.

WHEREFORE Rembrandt requests that this Panel enter an order denying CoxCom's motion in its entirety, or in the alternative, transfer any actions it deems appropriate to the Eastern District of Texas.

Dated: April 4, 2007

Respectfully submitted,

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BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re:)	
Rembrandt Technologies, LP Patent)	MDL Docket No. 1848
Litigation	)	In re: Rembrandt Technologies, LP
	)	Patent Litigation
)	
	)	ORAL ARGUMENT REQUESTED

**REMBRANDT'S BRIEF IN OPPOSITION TO COXCOM'S
MOTION TO TRANSFER AND CONSOLIDATE**

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FEDERAL STATUTES

28 U.S.C. § 1407	1, 11, 14
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In its effort to transfer the New York and Texas cases to Delaware for MDL Consolidation, CoxCom, Inc. (CoxCom) has inaccurately described the Rembrandt Technologies, LP (Rembrandt) litigations. Rembrandt respectfully submits that, when accurately understood, given the very different procedural postures of the cases, different patents, and different defendants who are competitors, coordination of the common issues can best be accomplished under the existing structure rather than through MDL consolidation. *See In re Eli Lilly and Company (Cephalexin Monohydrate) Patent Litigation*, 446 F. Supp. 242, 244 (J.P.M.L. 1978) (holding that “consultation and cooperation among the three concerned district courts, if deemed appropriate by those courts, coupled with the cooperation of the parties, would be sufficient to minimize the possibility of conflicting pretrial rulings.”).

In addition to conceding that consolidation of the majority of the cases would be inefficient¹, CoxCom ignores the fact that the oldest case, filed in the Eastern District of Texas, is too far advanced to benefit from transfer and consolidation. The first of Rembrandt's suits, *Rembrandt v. Comcast Corporation, Comcast Cable Communications, LLC, Comcast of Plano, LP*, 2:06-cv-443-TJW (E.D. Tex.) (*Comcast I*), was filed over eighteen months ago in September 2005. Claim construction has been fully briefed, and the case will likely go to trial before the end of this year. In fact, centralization would not serve the purposes of 28 U.S.C. § 1407 not only because *Comcast I* is nearly trial-ready, but also because eight other cases involving the same patents could be mooted in whole or in part by its resolution. Moreover, delaying the

¹ CoxCom's motion asserts that these cases should be consolidated, then informs the Panel that claims from nine of the fourteen cases should be “severed from the consolidation action” because they involve “completely different technology and activity.” CoxCom Memo. at 1, fn 2.

Comcast I trial date by transfer and consolidation to another court would unfairly prejudice Rembrandt and cause inefficiency by forcing another court to re-learn the *Comcast I* issues.

The fourteen actions in dispute are already logically grouped in the appropriate forums with no defendant subject to multiple jurisdictions, save CoxCom which subjected itself to this fate when it chose to file an improper declaratory judgment action in the District of Delaware. CoxCom's presence in dual forums will likely be resolved by the Court's rulings on pending motions to dismiss or transfer. For these reasons and those below, Rembrandt respectfully submits that Section 1407 transfer and consolidation is not necessary or the most appropriate means by which to provide whatever coordination of common issues may be desirable.

If the Panel nevertheless determines that Section 1407 consolidation is desirable, Rembrandt respectfully submits that the cases involving the '627 patent not be consolidated, consistent with CoxCom's motion. Further, if the Panel deems any consolidation appropriate and necessary, then Judge Ward of the Eastern District of Texas is in the best position to decide what coordination would provide efficiencies and, at the same time, not undermine the *Comcast I* progress towards trial.

I. Rembrandt's Actions Are Logically Grouped As Filed.

Rembrandt's case groupings promote efficiency and orderly consideration. CoxCom's recitation of the Rembrandt litigation incorrectly describes the Rembrandt cases. For that reason, Rembrandt corrects the record for the Panel and details the chronological history of Rembrandt's patent litigation.

A. Group I Cable Company Litigation

1. *Comcast I*, filed in September 2005, is at the *Markman* stage.

Rembrandt filed this first case in September 2005, asserting four patents: U.S. Patent Nos. 4,937,819; 5,852,631; 5,719,858; and 5,243,627. Three of these patents (the ‘819, ‘631, and ‘858) relate to improved methods for facilitating communication with modems and are infringed by the provision of high speed internet services. As CoxCom notes, the ‘627 involves “completely different technology and activity” because it relates to improved error correction in a digital television transmission system and is infringed by the receipt of certain broadcast signals. CoxCom Memo. at 1.

The case is now far advanced. The Court held its initial scheduling conference on May 2, 2006, set the claim construction hearing for February 8, 2007 and the trial for August 8, 2007. Subsequently, a third-party, Time Warner, intervened for the limited purpose of disqualifying Rembrandt's counsel. The Court granted Time Warner's motion a week before the scheduled claim construction hearing and allowed Rembrandt to postpone the hearing while it obtained new counsel. On March 8, 2007, Rembrandt informed the Court that it had retained new counsel and would be ready to proceed with the claim construction hearing on April 23, 2007, or any date thereafter that met the Court's schedule. *See* Exh. 1.

In the meantime, pretrial discovery progressed. Rembrandt and Comcast exchanged infringement and invalidity contentions in accordance with the Patent Rules of the Eastern District of Texas. The Court adopted a protective order under which the parties have produced over four (4) million pages of documents. They have also collectively served 37 interrogatories on each other. In addition, they have subpoenaed or obtained documents from 59

third parties. Some of those parties have produced source code relevant to the issues in the case which is subject to an Escrow Agreement entered by Rembrandt, Comcast, and an escrow agent. The Escrow Agreement governs the review and use of the source code, and much of that source code has been reviewed. Rembrandt has deposed six (6) Comcast witnesses and six (6) third-party witnesses have been deposed. Rembrandt and Comcast have also identified and exchanged claim terms for construction, exchanged proposed constructions for those terms, submitted a Joint Claim Construction Statement to the Court as required by the Eastern District Patent Rules and fully briefed their positions in anticipation of the claim construction hearing.

2. Group I Cases Against Charter, CoxCom and Time Warner.

About nine months after filing *Comcast I*, in June 2006, Rembrandt asserted the same four patents against several other defendants in two separate actions:

- *Rembrandt Technologies, LP v. Charter Communications, Inc. and CoxCom*, 2:06-cv-223 (E.D. Tex.) (*Charter/CoxCom I*), filed June 1, 2006.²
- *Rembrandt Technologies, LP v. Time Warner Cable, Inc.*, 2:06-CV-224-TJW (E.D. Tex.) (*Time Warner I*), filed June 1, 2006.

Thus, there are now three Group I cases pending before Judge Ward.

The Court held scheduling conferences in each case on April 3, 2007, and proposed trial dates for both cases in August 2008. *See* Exhs. 2-3 (notice of scheduling conferences). Rembrandt and the defendants agreed to, and the Court announced its intention to enter, the same pretrial schedule in both *Charter/CoxCom I* and *Time Warner I*. The parties have further

² CoxCom has moved to dismiss the claims against it for lack of personal jurisdiction. Rembrandt has opposed this motion and awaits a ruling from the Court.

agreed to hold only one claim construction hearing in the two cases. Rembrandt is also amenable to re-using discovery across Group I actions where applicable. Indeed, Rembrandt is willing to allow defendants in any of Rembrandt's cases access to prior discovery involving Rembrandt so long as it is relevant to that case. In addition, Rembrandt is willing to seek discovery from third parties only once where that discovery is relevant to, and can be used in, the other actions.

3. *Rembrandt v. Cablevision*, 01:06-cv-365 (D. Del.), filed October 13, 2006.

In October 2006, Rembrandt sued Cablevision in Delaware for infringement of the Group I patents, plus U.S. Patent 5,008,903. Rembrandt initially brought this action (but without the '903) in the Eastern District of Texas as part of the *Charter/CoxCom I* suit, but the parties agreed that jurisdiction was not proper there. Rembrandt, therefore, dismissed and re-filed against Cablevision in Delaware. This action has been stayed *sua sponte* by Judge Sleet pending a decision on the instant motion, as have all of the litigations in his Court involving Rembrandt patents. *See* Exh. 4.

B. *Rembrandt v. Sharp*, 2:06-cv-047-TJW (E.D. Tex.), filed February 3, 2006.

On February 3, 2006, Rembrandt asserted only the '627 patent against Sharp, a TV manufacturer. The Sharp case is also pending before Judge Ward in the Eastern District of Texas where a scheduling conference has been held, trial and pretrial deadlines have been set. Rembrandt already has served its infringement contentions in that case. *See* Exh. 5.

C. Group II Cable Company Litigation

1. Cases Pending in the Eastern District of Texas before Judge Ward

Rembrandt next filed a group of cases against a subset of *the same defendants* in the Eastern District of Texas on a completely different set of patents than involved in the Group I litigation. See CoxCom Exhs. 7, 11, and 15 (asserting United States Patent Nos. 5,008,903; 5,710,761; 5,778,234; 6,131,159; and 6,950,444). None of the patents in Group II share a specification or patent application with any of the Group I patents.

All of the defendants in the second wave of suits (Time Warner, Charter, CoxCom, and Comcast) were already litigating with Rembrandt before Judge Ward at the time the Group II litigation began. Thus, the parties were familiar with the extensive patent rules imposed by the Court and the District, and Judge Ward is likewise familiar with the parties.

These cases are as follows:

- Rembrandt Technologies, LP v. Time Warner Cable, Inc., 2:06-CV-369-TJW (E.D. Tex.) (*Time Warner II*), filed September 13, 2006
- Rembrandt Technologies, LP v. Comcast Corporation, Comcast Cable Communications, LL, Comcast of Plano, 2:06-CV-506-TJW (E.D. Tex.) (*Comcast II*), filed November 30, 2006
- Rembrandt Technologies, LP v. Charter Communications, Inc., Charter Communications Operating, LLC, CoxCom, Inc., 2:06-CV-507-TJW (E.D. Tex.) (*Charter/CoxCom II*), filed November 30, 2006³

³ CoxCom moved to dismiss the claims against it, just as it responded to the *Cox I* litigation. Alternatively, CoxCom asked the Court to transfer this action to the District of Delaware. Rembrandt similarly opposes this motion to dismiss and awaits a ruling from the Court.

The parties have agreed to place the Group II Litigation on the same pre-trial schedule as *Charter/CoxCom I* and *Time Warner I*, and have agreed to hold one claim construction hearing for the Group II cases. At the scheduling conference on April 2, 2007, the Court indicated its intent to enter the agreed schedule.

2. *Rembrandt Technologies, LP v. Adelphia Communications Corporation*, Adv. Proc. No. 06-01739 (Bankr. S.D.N.Y. 2006), filed September 13, 2006.

In September 2006, Rembrandt filed a patent infringement suit and administrative expense claim against bankrupt Adelphia Cable Corporation and several of its subsidiaries. See Exh. 33 to CoxCom's Motion *Rembrandt Technologies, LP v. Adelphia Communications Corporation*, Adv. Proc. No. 06-01739 (Bankr. S.D.N.Y. 2006). In the Adelphia suit, Rembrandt asserted four of the patents that are pending in the Group II cases before Judge Ward ('444, '159, '234, and '761). Rembrandt would have preferred to have the Eastern District of Texas court adjudicate the suit given its familiarity with the patents, but Rembrandt was compelled to proceed in New York because of the procedural posture of Adelphia's bankruptcy. Specifically Rembrandt needed to object to the plan of reorganization because it did not provide for reserves with which to pay disputed administrated claims after such claims had been allowed. Had Rembrandt not taken this action in New York and succeeded at modifying the plan, proceeding with any infringement claim would have been useless as no funds would have existed to satisfy Rembrandt's judgment.

D. *Group III Television Broadcaster Litigation Stayed By Judge Sleet in the District of Delaware.*

In December 2006, Rembrandt filed the Group III litigation in Delaware asserting a single patent, the '627, against certain television broadcasters - defendants not litigating in the

Eastern District of Texas. These cases are assigned to Judge Sleet who had not yet held a scheduling conference when -- on March 28, 2007 -- the Court entered a *sua sponte* order staying all of the matters involving Rembrandt patents. See Exh. 4. CoxCom's statement that Judge Sleet expressed an interest in consolidation of Rembrandt's Delaware cases is unsupported by any record, and Judge Sleet has never voiced such suggestion. In fact, Judge Sleet's only communication with respect to any of the Rembrandt litigation filed in Delaware is a sua sponte order staying all Rembrandt litigation in his Court pending this Panel's decision on CoxCom's motion. See *id.*

The Group III cases, all stayed, are as follows:

- *Rembrandt v. CBS*, 1:06-cv-727-GMS (D. Del.), filed December 1, 2006.
- *Rembrandt v. NBC*, 1:06-cv-729-GMS (D. Del.), filed December 1, 2006.
- *Rembrandt v. ABC*, 1:06-cv-730-GMS (D. Del.), filed December 1, 2006.
- *Rembrandt v. Fox*, 1:06-cv-731-GMS (D. Del.), filed December 1, 2006.

E. CoxCom's Decision to File in a Second Forum.

On November 30, 2006, CoxCom filed a declaratory judgment action against Rembrandt in the District of Delaware solely related to the '903 patent. *CoxCom, Inc., v. Rembrandt Technologies, LP*, 1:06-cv-721 (D. Del.). Rembrandt moved to dismiss this case on the ground that the Court lacks jurisdiction. See Exh. 6. Alternatively, Rembrandt asked the Court to decline to exercise jurisdiction given that the same patent in CoxCom's declaratory judgment action is already being litigated as part of Rembrandt's Group II cases. Judge Sleet has stayed this case as well.

II. Transfer and Consolidation Is Unnecessary and Counterproductive.

A. *Comcast I* is far too advanced to be consolidated.

CoxCom's motion should be denied because “Section 1407 centralization would neither serve the convenience of the parties and witnesses nor further the just and efficient conduct of this litigation.” *In re Solaia Technology LLC Patent & Antitrust Litigation*, 346 F. Supp. 2d 1373 (J.P.M.L. 2004) (denying motion to consolidate and transfer where “some constituent actions have already been pending for over two years”). As in *In re Solaia*, the *Comcast I* litigation has been pending for eighteen months and is far too advanced to benefit from assignment to an MDL proceeding. *See also In re Motion Picture Licensing Antitrust Litig.*, 479 F. Supp. 581, 590 (J.P.M.L. 1979) (“We have concluded that some or all claims raised in many of the actions now before us are also inappropriate for transfer, either because discovery and other pretrial proceedings are well advanced in those actions . . .”). Rembrandt filed suit against Comcast in 2005; claim construction is fully briefed and ready for oral argument; and trial is likely to begin several months thereafter. To ask a new Court to learn the patents and issues in dispute at this stage of the proceedings would not be efficient and would cause unjust and undue delay to Rembrandt.

B. *Comcast I* Negates the Need of Consolidation of any Case Involving the Same Patents.

The late stage of the *Comcast I* case impacts not only that one action but the Group I and Group III cases as a whole. The Panel has “consistently denied transfer of actions in patent litigation where one of the actions was proceeding expeditiously toward trial on the common issue of validity.” *In re Bourns Patent Litigation*, 385 F. Supp. 1260, 1261 (J.P.M.L. 1974). Because Judge Ward is on the verge of adjudicating the *Comcast I* case, including entering a

claim construction order and trying the validity of the asserted patents, consolidating the other eight cases involving one or more of these patents to another court would be inefficient because a patentee is collaterally estopped from re-litigating the validity of a patent once that issue has been fully adjudicated. *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313, 28 L. Ed. 2d 788, 91 S. Ct. 1434 (1971).

The Panel has recognized the *Blonder-Tongue* estoppel principle as a reason for denial of Section 1407 transfer. *See In re Eli Lilly and Co.*, 446 F. Supp. at 244 (denying MDL consolidation where “a holding in one action that the two Lilly patents are invalid would likely prove dispositive of that issue in the other two actions”). Applying the precedent of this Panel and *Blonder-Tongue*, given that each of the defendants in the Rembrandt cases has raised invalidity as a defense, any one of the eight later-filed actions could be mooted by a finding in an earlier case that the patents-in-suit are invalid. *Comcast I* will certainly be resolved well before the other cases as it is closer to trial, was filed nine months before the other actions, and the cases before Judge Sleet are stayed.⁴

C. CoxCom Argues that 9 of the 14 Cases Should Not Be Consolidated.

CoxCom has argued that all claims involving the ‘627 patent should be severed from any consolidated proceeding. That assertion implicates nine of the fourteen cases at issue which CoxCom asserts involve “completely different technology and activity.” CoxCom Memo. at 1, footnote 2. The ‘627 is the only patent asserted in each of the four Group III actions stayed before Judge Sleet in Delaware. Accepting CoxCom’s argument that the claims involving the

⁴ The other Group I and Group II Cable Company cases are currently scheduled to go to trial beginning in August 2008. Rembrandt believes that the Court will reset *Comcast I* for trial sometime in 2007.

'627 should not be consolidated, no basis exists for centralization under 28 U.S.C. § 1407. As discussed *supra*, the remaining cases are already logically grouped and the first case resolved could moot the other later-filed cases, especially given Judge Sleet's stay of the cases pending before him.

D. The Patents-in-Suit Relate to Different Technology, Weighing Against Consolidation.

The patents asserted by Rembrandt also are not suited for MDL consolidation for at least two other reasons.

First, unlike the situation in *In re Acacia*, where the patents-in-suit all related back to the same parent application and each asserted patent shared the same two inventors, the patents asserted by Rembrandt are neither a family of patents depending all from the same application, nor are the same group of inventors named on each patent. *See In re Acacia Media Technologies Corp. Patent Litigation*, 360 F. Supp. 2d 1377, 1379 (J.P.M.L. 2005) (granting Section 1407 motion where all actions involved the "Yurt family" of patents that related back to the same application); Exhs. 7 - 11.

Second, the argument that all patents that address the provision of cable services and products should be grouped together is contrary to Federal Circuit law regarding claim construction, one of the main pretrial tasks in a patent case. Principles of claim construction mandate close attention to each patent's specification because it "is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Following the Federal Circuit's guidance, the Court construing the claims of the asserted patents

will need to focus primarily on each patent's specification, so no efficiencies would be gained by considering the patents together merely because they relate to a general industry.

E. Inconsistent Rulings are Not a Concern.

No defendant other than CoxCom is subject to rulings in multiple courts. Since Judge Ward presides over the Group I and Group II Cable Company cases which involve the same defendants, it is unlikely that Judge Ward would rule inconsistently either with respect to a group of patents or with respect to defendants before him in multiple cases. Each defendant will be entitled to its own opportunity to raise unique arguments, and each trial judge will be free to make his own rulings based on the facts and law presented to him.

CoxCom will not be subject to inconsistent rulings because either its declaratory judgment in Delaware or Rembrandt's action in Texas will be transferred or dismissed. In any event, CoxCom will face the '903 patent only once. Put another way, each Defendant faces only one ruling on the meaning of the claims being asserted and only one judgment as to whether its products infringe any particular patent being asserted.

The one party faced with possible inconsistent rulings is Rembrandt because it would be difficult for Rembrandt to take different positions than those previously on record.

F. Alternatives to Transfer and Consolidation Exist and are More Appropriate.

The Panel has denied consolidation where it recognized that "alternatives to transfer exist that can minimize whatever possibilities there might be of duplicative discovery and/or inconsistent pretrial rulings." *In re Soliaia*, 346 F. Supp. 2d at 1373; *In re Eli Lilly and Co. Patent Litigation*, 446 F. Supp. at, 244 ("We observe that suitable alternatives to Section 1407 transfer are available in order to minimize the possibility of duplicative discovery. For example,

notices for a particular deposition could be filed in all actions, thereby making the deposition applicable in each action; the parties could seek to agree upon a stipulation that any discovery relevant to more than one action may be used in all those actions; and any party could seek orders from the three courts directing the parties to coordinate their pretrial efforts.”). Indeed, the parties in the Group I and Group II actions pending before Judge Ward are already agreed on identical pretrial schedules for all of the Group I and Group II cases, except *Comcast I. Rembrandt* will make relevant discovery from one action available in other cases where applicable and is amenable to other coordination among the district courts.

Patent damages require defendant-specific discovery regarding at least the following categories of information: profitability associated with the particular invention and the terms and practices pursuant to which that defendant has licensed comparable patents in the past. *See Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) (holding the following defendant-specific information relevant to damages in a patent case: how a particular defendant infringer has compensated other patent holders (Factor 2), the profitability of the defendant's infringing offerings (Factor 8), and the extent of the defendant infringer's use of the patented invention (Factor 11)). Moreover, many of the defendants compete with one another and presumably will not permit discovery unique to them to be shared among all parties in the Rembrandt litigation.

All of the defendants who are involved in multiple cases are before Judge Ward, save CoxCom, so the Court will be able to supervise discovery and ensure that it is efficient⁵. As

⁵ CoxCom inserted itself into two different forums by filing in Delaware long after it was first sued in Texas. The issue of dual forums for CoxCom will be resolved by rulings on the motions to dismiss pending in each forum.

recognized in *In re Eli Lilly*, "consultation and cooperation among the three concerned district courts, if deemed appropriate by those courts, coupled with the cooperation of the parties, would be sufficient to minimize the possibility of conflicting pretrial rulings. " 446 F. Supp. at 244.

CoxCom miscited Rembrandt's suggestion for the type of district court coordination recognized in *Eli Lilly* as an indication that Rembrandt supports Section 1407 transfer. CoxCom Memo. at 3 ("[E]ven Rembrandt believes that transfer and consolidation under 28 U.S.C. § 1407 is desirable." (citing CoxCom Exh. 43 at Exh. C at 13:16-14:10)). CoxCom is wrong. Rembrandt has never argued that consolidation of all of its cases would be appropriate, otherwise it would have filed all of its actions in the same forum in the first instance or moved itself for Section 1407 transfer.

In the hearing transcript cited by CoxCom, Rembrandt's counsel advised the Bankruptcy Court in the Southern District of New York of ongoing litigation in the Eastern District of Texas and, in response to a question from the Court, said that the Bankruptcy Court might benefit from sharing pretrial proceedings with that Court. *See id.* ("[I]f . . . Your Honor wanted to coordinate with Judge Ward and reach some sort of mutual claim construction with Judge Ward . . . it might be a good idea for you to coordinate with the Eastern District of Texas with respect to issues like that. . . .if Your Honor wanted to coordinate more closely with the Eastern District and sort of follow along on pretrial matters with that district in the Time Warner case, I think that probably would be advantageous to everyone involved."). Rembrandt never advocated MDL consolidation of all of its actions, as the only ones discussed at that hearing were the Group II cases and the Adelphia proceeding. Instead, Rembrandt agreed with this Panel's prior rulings that coordination among district courts is a good alternative to Section 1407 transfer and consolidation.

III. The Eastern District of Texas Is the Most Logical Transferee Court.

For the above reasons, Rembrandt opposes consolidation and transfer. However, should the Panel rule that consolidation and transfer is appropriate, the factors cited by CoxCom to determine the best forum for centralization all point to Judge Ward of the Eastern District of Texas. Taking CoxCom's enumerated factors in order:

A. The Pendency in that District of a Number of the Actions.

Judge Ward currently has responsibility for seven of the fourteen actions that are the subject of CoxCom's motion, including the Rembrandt litigation that has been on file since September 2005. Judge Sleet, by contrast, presides over six cases at issue, four of the six dealing only with U.S. Patent No. 5,243,627 ('627), claims that CoxCom argues should be severed immediately following consolidation. A fifth case involves claims of the '627 patent and other Rembrandt patents. The sixth case pending before Judge Sleet, CoxCom's declaratory judgment action on the '903, would be dismissed if Rembrandt's pending motion is granted. Thus, when examined closely, Judge Sleet has only one case before him that CoxCom itself argues should be consolidated in its entirety, and that case is subject to a motion to dismiss and is stayed.

B. The Court's Familiarity with the Issues.

In *Comcast I*, claim construction has been fully briefed and trial may occur this year. Judge Ward has all of the patents-in-suit before him and is the only judge in this position. Judge Ward has presided over Rembrandt's litigation for over eighteen months and is most familiar with the patents at issue. As this Panel has recognized, the longstanding pendency of one of the actions weighs in the determination of a transferee judge. See *In re JP Morgan Chase & Co. Securities Litigation*, 452 F. Supp.2d 1350 (J.P.M.L. 2006) ("The Panel is persuaded that the

Northern District of Illinois is an appropriate transferee district for this litigation. The action pending there, which is the earliest filed of the three actions, is more procedurally advanced than the two Delaware actions.”).

Judge Ward’s background gained by adjudicating *Comcast I* will aid in the resolution of the rest of the Group I litigation. In addition to his familiarity with the patents at issue in the Group I cases, the same parties are before Judge Ward in both the Group I and Group II cases, so the parties are familiar with the local rules as well as Judge Ward’s individual practices. Judge Ward is also familiar with any unique issues presented by those parties, including their scheduling needs. Moreover, transfer of the remaining cases to Judge Ward would not greatly increase the Court’s workload given that all nine patents at issue are already before it in pending proceedings.

In contrast, Judge Sleet has not taken any action on the Rembrandt cases, except to stay all of them pending a decision by this Panel. Transfer and consolidation before Judge Sleet at this juncture would unfairly delay trial of *Comcast I*, a case that has been on file for eighteen months and is likely to be tried this year. In order to handle the MDL, Judge Sleet would, at a minimum, need to spend time familiarizing himself with the four patents-in-suit to which he has had no introduction and decide pretrial matters based on prior events in the litigation before his involvement. These tasks would delay Rembrandt’s day in court indefinitely when Judge Ward is ready to proceed to trial several months from now.

C. The District or Judge’s Willingness to Accept Responsibility for Conducting Coordinated or Consolidated Pretrial Proceedings.

CoxCom tells the Panel that “Judge Sleet has already indicated an interest in at least coordinating the six Rembrandt actions pending in Delaware.” CoxCom Memo. at 17 citing

CoxCom Exh. 19 at 3-4. But CoxCom's sole basis for this statement (CoxCom Exh. 19) is a status report **filed by the parties with no statements from the Court.** In that statement, the parties notify the Court of other Rembrandt litigation, but there is no indication whatsoever that Judge Sleet has expressed an interest in consolidating the cases pending in Delaware. Judge Sleet *sua sponte* stayed all litigation involving Rembrandt patents in his Court before convening any scheduling conferences.

Rembrandt cannot speak to Judge Ward's willingness to preside over MDL proceedings for these cases, but the Court's familiarity with patent cases is well-recognized. Judge Ward has presided over more than one hundred patent cases.

D. The Eastern District of Texas Docket Is More Favorable.

CoxCom contorts its own articulated factor "favorable status of the civil docket" by suggesting that Delaware should be deemed favorable because fewer cases were pending there in 2006 than were pending in 2005. CoxCom Memo. at 18. The Federal Judiciary statistics computing the median time from filing to trial reflect that this interval stands at 17.7 months in the Eastern District of Texas as compared to Delaware where that same process takes 26 months. *See* Exhs. 12-13 (citing Administrative Office of the Federal Courts Federal Court Management Statistics for the 12-month period ending September 30, 2006, available at <http://www.uscourts.gov/fcmstat/index.html>).

E. Place of Incorporation Is Irrelevant to the Location for an MDL Proceeding.

Given that the factors cited by CoxCom exclusively favor transfer to the Eastern District of Texas, CoxCom's argument in favor of Delaware rests on the false premise that centralization should follow the place of incorporation of some of the parties. CoxCom Memo. at 19.

CoxCom argues - without any precedent - that the place of incorporation of the defendants weighs in favor of transfer to Delaware. Left without legal support, CoxCom submits that Delaware would be “convenient for parties, witnesses and discovery.” CoxCom Memo. at 19. But this bald assertion is not supported by any facts. CoxCom has not shown that any of the defendants' witnesses are resident in Delaware much less a substantial majority of them, nor that the companies themselves have a large center of operations in Delaware. CoxCom has far from met the movant's burden to establish that Delaware is any more convenient than the Eastern District of Texas.

If CoxCom's motion compels consolidation and transfer, Judge Ward's Court is the obvious choice for transferee court because of the judges presiding over Rembrandt patent litigation:

- Only Judge Ward already has all nine patents-in-suit before him.
- Only Judge Ward has half of the pending actions before him already.
- Judge Ward's cases are the most advanced by far of any of the litigation.
- The Eastern District of Texas has a faster time to trial than Delaware.
- The Eastern District of Texas Patent Rules are familiar to the parties and enable fast resolution of these cases.

IV. Conclusion

Because centralization would neither aid in the just and efficient resolution of the Rembrandt's patent litigation nor serve the convenience of the parties and witnesses, CoxCom's motion should be denied. In the event that centralization is deemed appropriate, the Eastern District of Texas is the most logical forum for the transferee court given Judge Ward's familiarity with the issues and investment in the litigation thus far.

Dated: April 4, 2007

Respectfully submitted,

/s/ Brooke A.M. Taylor

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EXHIBIT

1

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP

Plaintiff,

vs.

**COMCAST CORPORATION;
COMCAST CABLE
COMMUNICATIONS, LLC; AND
COMCAST OF PLANO, LP,**

Defendants.

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Case No. 2:05-CV-00443-TJW

JURY TRIAL REQUESTED

**STATUS REPORT
ON
CLAIM CONSTRUCTION HEARING AND CASE SCHEDULE**

Plaintiff Rembrandt Technologies, LP (“Rembrandt”), pursuant to this Court’s Orders of February 1, 2007 (Docket No. 140) and February 8, 2007 (Docket No. 145) submits this Status Report on (i) the Claim Construction Hearing and (ii) the Case Schedule.

1. **Claim Construction Hearing.** Rembrandt will be prepared to proceed with the Claim Construction Hearing in this case the week of April 23, 2007, or any time thereafter. Rembrandt requests that the Court set the Claim Construction Hearing as the Court’s schedule permits during or after the week of April 23, 2007.

2. **Case Schedule.** If acceptable to the Court, Rembrandt proposes that within 15 business days after the date the Court informs the Parties of the new date for the Claim Construction Hearing, Rembrandt will inform the Court whether it believes that a new schedule is necessary and, if necessary, will submit a proposed schedule with new deadlines. Rembrandt will attempt to reach agreement with the Comcast Parties on any proposed deadlines.

Dated: March 8, 2007

Respectfully, submitted,

/s/ Sam Baxter

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CERTIFICATE OF CONFERENCE

Counsel for Rembrandt discussed the status report with counsel for the Comcast Parties.

The Comcast Parties were not able to join in the status report.

/s/ Jeffrey A. Carter

Jeffrey A. Carter

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a), contemporaneously served upon all counsel who have consented to electronic service and served by first class mail on other counsel on this the 8th day of March, 2007.

/s/ Sam Baxter

Sam Baxter

EXHIBIT

2

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP §
 §
V. § CIVIL NO. 2:06-CV-223(TJW)
 §
CHARTER COMMUNICATIONS, INC., §
ET AL. §

**NOTICE OF SCHEDULING CONFERENCE,
PROPOSED DEADLINES FOR DOCKET CONTROL ORDER
AND DISCOVERY ORDER**

The court, *sua sponte*, issues this Notice of Scheduling Conference, Proposed Deadlines for Docket Control Order and Discovery Order.

Notice of Scheduling Conference

Pursuant to Fed. R. Civ. P. 16 and Local Rule CV-16, the Scheduling Conference in this case is set for **April 3, 2007, at 2:00 p.m. in Marshall, Texas**. The parties are directed to meet and confer in accordance with Fed. R. Civ. P. 26(f) prior to the conference. The parties are excused from the requirement of filing a written proposed discovery plan in this case.

Proposed Deadlines for Docket Control Order

The proposed deadlines for docket control order set forth in the attached Appendix A shall be discussed at the Scheduling Conference. The court will not modify the proposed trial date except for good cause shown.

Discovery Order

After a review of the pleaded claims and defenses in this action and in furtherance of the management of the court's docket under Fed. R. Civ. P. 16, it is ORDERED AS FOLLOWS:

1. **Disclosures.** Except as provided by paragraph 1(h), and, to the extent not already disclosed,

within thirty (30) days after the Scheduling Conference, each party shall disclose to every other party the following information:

- (a) the correct names of the parties to the lawsuit;
- (b) the name, address, and telephone number of any potential parties;
- (c) the legal theories and, in general, the factual bases of the disclosing party's claims or defenses (the disclosing party need not marshal all evidence that may be offered at trial);
- (d) the name, address, and telephone number of persons having knowledge of relevant facts, a brief statement of each identified person's connection with the case, and a brief, fair summary of the substance of the information known by any such person;
- (e) any indemnity and insuring agreements under which any person or entity carrying on an insurance business may be liable to satisfy part or all of a judgment entered in this action or to indemnify or reimburse for payments made to satisfy the judgment;
- (f) any settlement agreements relevant to the subject matter of this action;
- (g) any statement of any party to the litigation;
- (h) for any testifying expert, by the date set by the court in the Docket Control Order, each party shall disclose to the other party or parties:
 - a. the expert's name, address, and telephone number;
 - b. the subject matter on which the expert will testify;
 - c. if the witness is retained or specially employed to provide expert testimony in the case or whose duties as an employee of the disclosing party regularly involve giving expert testimony:
 - (a) all documents, tangible things, reports, models, or data compilations

that have been provided to, reviewed by, or prepared by or for the expert in anticipation of the expert's testimony; and

(b) the disclosures required by Fed. R. Civ. P. 26(a)(2)(B) and Local Rule CV-26.

d. for all other experts, the general substance of the expert's mental impressions and opinions and a brief summary of the basis for them or documents reflecting such information;

Any party may move to modify these disclosures for good cause shown.

2. **Protective Orders.** Upon the request of any party before or after the Scheduling Conference, the court shall issue the Protective Order in the form attached as Appendix B. Any party may oppose the issuance of or move to modify the terms of the Protective Order for good cause.

3. **Additional Disclosures.** In addition to the disclosures required in Paragraph 1 of this Order, at the Scheduling Conference, the court shall amend this discovery order and require each party, without awaiting a discovery request, to provide, to the extent not already provided, to every other party the following:

- (a) the disclosures required by the Patent Rules for the Eastern District of Texas;
- (b) within forty-five (45) days after the Scheduling Conference, a copy of all documents, data compilations, and tangible things in the possession, custody, or control of the party that are relevant to the case, except to the extent these disclosures are affected by the time limits set forth in the Patent Rules for the Eastern District of Texas. By written agreement of all parties, alternative forms of disclosure may be provided in lieu of paper copies. For example, the parties may agree to exchange images of

documents electronically or by means of computer disk; or the parties may agree to review and copy disclosure materials at the offices of the attorneys representing the parties instead of requiring each side to furnish paper copies of the disclosure materials;

- (c) within forty-five (45) days after the Scheduling Conference, a complete computation of any category of damages claimed by any party to the action, making available for inspection and copying as under Rule 34, the documents or other evidentiary material on which such computation is based, including materials bearing on the nature and extent of injuries suffered; and
- (d) within forty-five (45) days after the Scheduling Conference, those documents and authorizations described in Local Rule CV-34; and

The court shall order these disclosures in the absence of a showing of good cause by any party objecting to such disclosures.

4. **Discovery Limitations.** At the Scheduling Conference, the court shall also amend this discovery order to limit discovery in this cause to the disclosures described in Paragraphs 1 and 3 together with 60 interrogatories, 60 requests for admissions, the depositions of the parties, depositions on written questions of custodians of business records for third parties, depositions of three (3) expert witnesses per side and forty (40) hours of additional depositions per side. "Side" means a party or a group of parties with a common interest. Any party may move to modify these limitations for good cause.
5. **Privileged Information.** There is no duty to disclose privileged documents or information. However, the parties are directed to meet and confer concerning privileged documents or information after the Scheduling Conference. Within sixty (60) days after the Scheduling

Conference, the parties shall exchange privilege logs identifying the documents or information and the basis for any disputed claim of privilege in a manner that, without revealing information itself privileged or protected, will enable the other parties to assess the applicability of the privilege or protection. Any party may move the court for an order compelling the production of any documents or information identified on any other party's privilege log. If such a motion is made, the party asserting privilege shall respond to the motion within the time period provided by Local Rule CV-7. The party asserting privilege shall then file with the Court within thirty (30) days of the filing of the motion to compel any proof in the form of declarations or affidavits to support their assertions of privilege, along with the documents over which privilege is asserted for *in camera* inspection. If the parties have no disputes concerning privileged documents or information, then the parties shall inform the court of that fact within sixty (60) days after the Scheduling Conference.

6. **Pre-trial disclosures.** Absent a showing of good cause by any party, the court shall require the following additional disclosures:

Each party shall provide to every other party regarding the evidence that the disclosing party may present at trial as follows:

- (a) The name and, if not previously provided, the address and telephone number, of each witness, separately identifying those whom the party expects to present at trial and those whom the party may call if the need arises.
- (b) The designation of those witnesses whose testimony is expected to be presented by means of a deposition and, if not taken stenographically, a transcript of the pertinent portions of the deposition testimony.
- (c) An appropriate identification of each document or other exhibit, including summaries

of other evidence, separately identifying those which the party expects to offer and those which the party may offer if the need arises.

Unless otherwise directed by the court, these disclosures shall be made at least 30 days before trial. Within 14 days thereafter, unless a different time is specified by the court, a party may serve and file a list disclosing (1) any objections to the use under Rule 32(a) of a deposition designated by another party under subparagraph (B), and (2) any objections, together with the grounds therefor, that may be made to the admissibility of materials identified under subparagraph (c). Objections not so disclosed, other than objections under Rules 402 and 403 of the Federal Rules of Evidence, shall be deemed waived unless excused by the court for good cause shown.

7. **Signature.** The disclosures required by this order shall be made in writing and signed by the party or counsel and shall constitute a certification that, to the best of the signer's knowledge, information and belief, such disclosure is complete and correct as of the time it is made. If feasible, counsel shall meet to exchange disclosures required by this order; otherwise, such disclosures shall be served as provided by Fed. R. Civ. P. 5. The parties shall promptly file a notice with the court that the disclosures required under this order have taken place.
8. **Duty to Supplement.** After disclosure is made pursuant to this order, each party is under a duty to supplement or correct its disclosures immediately if the party obtains information on the basis of which it knows that the information disclosed was either incomplete or incorrect when made, or is no longer complete or true.
9. **Disputes.**
 - (a) Except in cases involving claims of privilege, any party entitled to receive disclosures may, after the deadline for making disclosures, serve upon a party required to make

disclosures a written statement, in letter form or otherwise, of any reason why the party entitled to receive disclosures believes that the disclosures are insufficient. The written statement shall list, by category, the items the party entitled to receive disclosures contends should be produced. The parties shall promptly meet and confer. If the parties are unable to resolve their dispute, then the party required to make disclosures shall, within fourteen (14) days after service of the written statement upon it, serve upon the party entitled to receive disclosures a written statement, in letter form or otherwise, which identifies (1) the requested items that will be disclosed, if any, and (2) the reasons why any requested items will not be disclosed. The party entitled to receive disclosures may thereafter file a motion to compel.

- (b) Counsel are directed to contact the chambers of the undersigned for any “hot-line” disputes before contacting the Discovery Hotline provided by Local Rule CV-26(e). If the undersigned is not available, the parties shall proceed in accordance with Local Rule CV-26(e).

10. **No Excuses.** A party is not excused from the requirements of this Discovery Order because it has not fully completed its investigation of the case, or because it challenges the sufficiency of another party’s disclosures, or because another party has not made its disclosures. Absent court order to the contrary, a party is not excused from disclosure because there are pending motions to dismiss, to remand or to change venue.
11. **Filings.** Any filings in excess of twenty (20) pages, counsel is directed to provide a courtesy copy to Chambers, simultaneously with the date of filing.

12. **Modifications to Patent Rules.** The attached Appendix C applies to this case and supplements the Patent Rules for the Eastern District of Texas. These modifications are not intended to apply to any other case except as may be expressly provided by order of this Court.

SIGNED this 14th day of March, 2007.

A handwritten signature in black ink, reading "T. John Ward", written over a horizontal line.

T. JOHN WARD
UNITED STATES DISTRICT JUDGE

APPENDIX A

PROPOSED DEADLINES FOR DOCKET CONTROL ORDER

**PROPOSED DEADLINES TO BE DISCUSSED
AT THE SCHEDULING CONFERENCE
APRIL 3, 2007**

**Monday,
August 4, 2008**

Jury Selection - 9:00 a.m. in **Marshall, Texas**

July 24, 2008

Pretrial Conference - 9:30 a.m. in **Marshall, Texas**

July 21, 2008

Joint Pretrial Order, Joint Proposed Jury Instructions and Form of the Verdict.

July 21, 2008

Motions in Limine (due three days before final Pre-Trial Conference).

Three (3) days prior to the pre-trial conference provided for herein, the parties shall furnish a copy of their respective Motions in Limine to the Court by facsimile transmission, **903/935-2295**. The parties are directed to confer and advise the Court on or before 3:00 o'clock p.m. the day before the pre-trial conference which paragraphs are agreed to and those that need to be addressed at the pre-trial conference. **The parties shall limit their motions in limine to those issues which, if improperly introduced into the trial of the cause, would be so prejudicial that the Court could not alleviate the prejudice with appropriate instruction(s).**

July 7, 2008

Response to Dispositive Motions (including *Daubert* motions)

July 7, 2008

Notice of Request for Daily Transcript or Real Time Reporting of Court Proceedings. If a daily transcript or real time reporting of court proceedings is requested for trial, the party or parties making said request shall file a notice with the Court and e-mail the Court Reporter, Susan Simmons, at lssimmons@yahoo.com.

June 20, 2008

For Filing Dispositive Motions and any other motions that may require a hearing (including *Daubert* motions)
Responses to dispositive motions filed prior to the dispositive motion deadline, including *Daubert* Motions, shall be due in accordance with Local Rule CV-7(e). Motions for Summary Judgment shall comply with Local Rule CV56.

May 21, 2008

Defendant to Identify Trial Witnesses

May 7, 2008

Plaintiff to Identify Trial Witnesses

May 7, 2008

Discovery Deadline

30 Days after claim construction ruling
Designate Rebuttal Expert Witnesses other than claims construction
Expert witness report due
Refer to Discovery Order for required information.

15 Days after claim construction ruling
Comply with P.R. 3-8.

15 Days after claim construction ruling
Party with the burden of proof to designate Expert Witnesses other than claims construction
Expert witness report due
Refer to Discovery Order for required information.

February 6, 2008

Claim construction hearing 9:00 a.m., **Marshall, Texas.**

January 14, 2008

Comply with P.R. 4-5(c).

January 7, 2008

Comply with P.R. 4-5(b).

December 24, 2007	Comply with P.R. 4-5(a).
November 30, 2007	Discovery deadline—claims construction issues
November 23, 2007	Respond to Amended Pleadings
November 9, 2007	Amend Pleadings (It is not necessary to file a Motion for Leave to Amend before the deadline to amend pleadings except to the extent the amendment seeks to add a new patent in suit. It is necessary to file a Motion for Leave to Amend after November 9, 2007).
November 9, 2007	Comply with P.R. 4-3.
October 9, 2007	Comply with P.R. 4-2.
September 19, 2007	Comply with P.R. 4-1.
May 18, 2007	Comply with P.R. 3-3.
June 4, 2007	Privilege Logs to be exchanged by parties (or a letter to the Court stating that there are no disputes as to claims of privileged documents).
May 3, 2007	Join Additional Parties
April 13, 2007	Comply with P.R. 3-1

**To be discussed at
Scheduling Conference**

Mediation to be completed

If the parties agree that mediation is an option, the Court will appoint a mediator or the parties will mutually agree upon a mediator. If the parties choose the mediator, they are to inform the Court by letter the name and address of the mediator. The courtroom deputy will immediately mail out a "mediation packet" to the mediator for the case. The mediator shall be deemed to have agreed to the terms of Court Ordered Mediation Plan of the United States District Court of the Eastern District of Texas by going forth with the mediation. General Order 99-2.

April 3, 2007

Scheduling Conference (All attorneys are directed to Local Rule CV-16 for scope of the Scheduling Conference).

The parties are directed to Local Rule CV-7(d), which provides in part that "[i]n the event a party fails to oppose a motion in the manner prescribed herein the court will assume that the party has no opposition." Local Rule CV-7(e) provides that a party opposing a motion has **12 days, in addition to any added time permitted under Fed. R. Civ. P. 6(e)**, in which to serve and file a response and any supporting documents, after which the court will consider the submitted motion for decision.

OTHER LIMITATIONS

1. All depositions to be read into evidence as part of the parties' case-in-chief shall be **EDITED** so as to exclude all unnecessary, repetitious, and irrelevant testimony; **ONLY** those portions which are relevant to the issues in controversy shall be read into evidence.
2. The Court will refuse to entertain any motion to compel discovery filed after the date of this Order unless the movant advises the Court within the body of the motion that counsel for the parties have first conferred in a good faith attempt to resolve the matter. See Eastern District of Texas Local Rule CV-7(h).
3. The following excuses will not warrant a continuance nor justify a failure to comply with the discovery deadline:
 - (a) The fact that there are motions for summary judgment or motions to dismiss pending;

- (b) The fact that one or more of the attorneys is set for trial in another court on the same day, unless the other setting was made prior to the date of this order or was made as a special provision for the parties in the other case;
- (c) The failure to complete discovery prior to trial, unless the parties can demonstrate that it was impossible to complete discovery despite their good faith effort to do so.

APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP	§	
	§	
V.	§	CIVIL NO. 2:06-CV-223(TJW)
	§	
CHARTER COMMUNICATIONS, INC.,	§	
ET AL.	§	

STANDARD PROTECTIVE ORDER

The Court, *sua sponte*, issues this Protective Order to facilitate document disclosure and production under the Local Rules of this Court and the Federal Rules of Civil Procedure. Unless modified pursuant to the terms contained in this Order, this Order shall remain in effect through the conclusion of this litigation.

In support of this order, the court finds that:

1. Documents or information containing confidential proprietary and business information and/or trade secrets ("Confidential Information") that bear significantly on the parties' claims or defenses is likely to be disclosed or produced during the course of discovery in this litigation;
2. The parties to this litigation may assert that public dissemination and disclosure of Confidential Information could severely injure or damage the party disclosing or producing the Confidential Information and could place that party at a competitive disadvantage;
3. Counsel for the party or parties receiving Confidential Information are presently without sufficient information to accept the representation(s) made by the party or parties producing Confidential Information as to the confidential, proprietary, and/or trade secret nature of such

Confidential Information; and

4. To protect the respective interests of the parties and to facilitate the progress of disclosure and discovery in this case, the following Order should issue:

IT IS THEREFORE ORDERED THAT:

1. Documents or discovery responses containing Confidential Information disclosed or produced by any party in this litigation are referred to as "Protected Documents." Except as otherwise indicated below, all documents or discovery responses designated by the producing party as "Confidential" and which are disclosed or produced to the attorney's for the other parties to this litigation are Protected Documents and are entitled to confidential treatment as described below.
2. Protected Documents shall not include (a) advertising materials, (b) materials that on their face show that they have been published to the general public, or (c) documents that have submitted to any governmental entity without request for confidential treatment.
3. At any time after the delivery of Protected Documents, counsel for the party or parties receiving the Protected Documents may challenge the Confidential designation of all or any portion thereof by providing written notice thereof to counsel for the party disclosing or producing the Protected Documents. If the parties are unable to agree as to whether the confidential designation of discovery material is appropriate, the party or parties receiving the Protected Documents shall certify to the Court that the parties cannot reach an agreement as to the confidential nature of all or a portion of the Protected Documents. Thereafter, the party or parties disclosing or producing the Protected Documents shall have ten (10) days from the date of certification to file a motion for protective order with regard to any Protected Documents in dispute. The party or parties producing the Protected Documents shall have

the burden of establishing that the disputed Protected Documents are entitled to confidential treatment. If the party or parties producing the Protected Documents do not timely file a motion for protective order, then the Protected Documents in dispute shall no longer be subject to confidential treatment as provided in this Order. All Protected Documents are entitled to confidential treatment pursuant to the terms of this Order until and unless the parties formally agree in writing to the contrary, a party fails to timely move for a protective order, or a contrary determination is made by the Court as to whether all or a portion of a Protected Document is entitled to confidential treatment.

4. Confidential Treatment. Protected Documents and any information contained therein shall not be used or shown, disseminated, copied, or in any way communicated to anyone for any purpose whatsoever, except as provided for below.
5. Protected Documents and any information contained therein shall be disclosed only to the following persons ("Qualified Persons"):
 - (a) Counsel of record in this action for the party or party receiving Protected Documents or any information contained therein;
 - (b) Employees of such counsel (excluding experts and investigators) assigned to and necessary to assist such counsel in the preparation and trial of this action; and
 - (c) The Court.

Protected Documents and any information contained therein shall be used solely for the prosecution of this litigation.

6. Counsel of record for the party or parties receiving Protected Documents may create an index of the Protected Documents and furnish it to attorneys of record representing or having represented parties involved in litigation involving the claims alleged in this suit against the party or parties disclosing or producing the Protected Documents. The index may only

identify the document, date, author, and general subject matter of any Protected Document, but may not reveal the substance of any such document. Counsel for the party or parties receiving Protected Documents shall maintain a current log of the names and addresses of persons to whom the index was furnished.

7. The term “copy” as used herein means any photographic, mechanical or computerized copy or reproduction of any document or thing, or any verbatim transcript, in whole or in part, of such document or thing.
8. To the extent that Protected Documents or information contained therein are used in depositions, at hearings, or at trial, such documents or information shall remain subject to the provisions of this Order, along with the transcript pages of the deposition testimony and/or trial testimony referring to the Protected Documents or information contained therein.
9. Any court reporter or transcriber who reports or transcribes testimony in this action shall agree that all “confidential” information designated as such under this Order shall remain “confidential” and shall not be disclosed by them, except pursuant to the terms of this Order, and that any notes or transcriptions of such testimony (and any accompanying exhibits) will be retained by the reporter or delivered to counsel of record.
10. Inadvertent or unintentional production of documents or information containing Confidential Information which are not designated “confidential” shall not be deemed a waiver in whole or in part of a claim for confidential treatment.
11. The party or parties receiving Protected Documents shall not under any circumstances sell, offer for sale, advertise, or publicize Protected Documents or any information contained therein.
12. After termination of this litigation, the provisions of this Order shall continue to be binding,

except with respect to those documents and information that become a matter of public record. This Court retains and shall have continuing jurisdiction over the parties and recipients of the Protected Documents for enforcement of the provisions of this Order following termination of this litigation.

13. Upon termination of this action by dismissal, judgment, or settlement, counsel for the party or parties receiving Protected Documents shall return the Protected Documents to the counsel for the party or parties disclosing or producing the Protected Documents. The party or parties receiving the Protected Documents shall keep their attorney work product which refers or relates to any Protected Documents. Attorney work product may be used in subsequent litigation provided that such use does not disclose Protected Documents or any information contained therein.
 14. This Order shall be binding upon the parties and their attorneys, successors, executors, personal representatives, administrators, heirs, legal representatives, assigns, subsidiaries, divisions, employees, agents, independent contractors, or other persons or organizations over which they have control.
 15. The Court anticipates and encourages the parties to file a motion to modify the terms hereof with respect to the sharing of Protected Documents with experts and consultants; shifting the cost burden of production equitably; and other terms that may be reasonably required to protect a party as provided in Rule 26(b) or (c) of the Federal Rules of Civil Procedure.
- So ORDERED AND SIGNED this _____ day of _____, 2007.

T. JOHN WARD
UNITED STATES DISTRICT JUDGE

APPENDIX C

ORDER RELATING TO PATENT CASES BEFORE JUDGE T. JOHN WARD

The Court issues certain modifications to the Eastern District Patent Rules. The modifications relate to three issues: (1) Notice Requirements, (2) Infringement and Invalidity Contentions for Software, and (3) Deadlines Related to Claim Construction.

I. Notice Requirements

The Court has seen a dramatic increase in the number of disputes related to parties serving “supplemental,” “additional,” or “revised” P.R. 3-1 or P.R. 3-3 disclosures. In the past, parties were not required to provide notice to the Court regarding compliance with P.R. 3-1 or P.R. 3-3. Thus, certain parties attempted to avoid the rule that Preliminary Contentions are final except as provided in P.R. 3-6 and P.R. 3-7. Accordingly, the Court modifies P.R. 3-1 and P.R. 3-3 in the following manner:

P.R. 3-1(g): Any time a party claiming patent infringement serves Preliminary Infringement Contentions on an opposing party, the party claiming patent infringement shall also file with the Court a Notice of Compliance with P.R. 3-1.

P.R. 3-3(e): Any time a party opposing patent infringement serves Preliminary Invalidity Contentions on an opposing party, the party opposing patent infringement shall also file with the Court a Notice of Compliance with P.R. 3-3.

Under this Court’s interpretation of the Patent Rules, leave of Court is required for serving “amended,” “supplemental,” or “revised” P.R. 3-1 or P.R. 3-3 disclosures. The Court will strike “amendments,” “supplements,” or “revisions” of P.R. 3-1 or P.R. 3-3 disclosures that do not comply with P.R. 3-6 or P.R. 3-7.

II. Infringement and Invalidity Contentions for Software

Additional modifications to the Patent Rules regarding P.R. 3-1 and P.R. 3-3 are being made

to reduce discovery disputes and motion practice resulting from patents that contain software claim limitations. The Patent Rules require a party asserting claims of patent infringement to take a firm position in the litigation as it relates to infringement early on in the case. This and other courts in the Eastern District of Texas, however, recognize that software claim limitations present unique challenges for the parties because parties claiming patent infringement do not typically have access to an opposing party's source code before filing suit. At the same time, parties opposing a claim for patent infringement are hampered in their ability to prepare a defense absent specific infringement contentions from the party asserting claims of patent infringement.

The lack of access to source code coupled with an opponent's right to prepare a defense has led to numerous discovery disputes. To alleviate these disputes and to provide clear direction to the parties as to their rights and responsibilities under the Patent Rules, the Court modifies the Patent Rules in a manner consistent with such cases as *American Video Graphics, L.P. v. Electronic Arts, Inc.*, 359 F. Supp. 2d 558 (E.D. Tex. 2005).

The Court's modifications to P.R. 3-1 and P.R. 3-3 are set out below.

P.R. 3-1 (h): If a party claiming patent infringement asserts that a claim element is a software limitation, the party need not comply with P.R. 3-1 for those claim elements until 30 days after source code for each Accused Instrumentality is produced by the opposing party. Thereafter, the party claiming patent infringement shall identify, on an element-by-element basis for each asserted claim, what source code of each Accused Instrumentality allegedly satisfies the software limitations of the asserted claim elements.

P.R. 3-3(f): If a party claiming patent infringement exercises the provisions of P.R. 3-1(g), the party opposing a claim of patent infringement may serve, not later than 30 days after receipt of a P.R. 3-1(g) disclosure, supplemental "Preliminary Invalidity Contentions" that amend only those claim elements identified as software limitations by the party claiming patent infringement.

Thus, if a party claiming patent infringement asserts that a claim element (or the entire claim) is software, that party need only identify the element as a software limitation in its initial compliance

with P.R. 3-1, but does not need to identify where such limitation is met in the Accused Instrumentality. After receipt of the source code for an Accused Instrumentality, the party is permitted 30 days to supplement its P.R. 3-1 disclosure to identify, with specificity, the source code of the Accused Instrumentality that allegedly satisfies the software claim elements. P.R. 3-1(g) does not allow Plaintiff the opportunity to modify or amend any non-software claim contentions.

Likewise, once a party opposing a claim of patent infringement is in receipt of a P.R. 3.1(g) disclosure, the party is allowed 30 days to modify its initial P.R. 3-3 disclosures, but only to the extent the modifications relate to the software claim elements identified by the party claiming patent infringement. P.R. 3-3(e) does not allow a party opposing a claim of infringement an opportunity to modify or amend any non-software contentions.

III. Claim Construction Deadlines

The final amendments to the Patent Rules relate to claim construction deadlines. In the Eastern District Patent Rules, claim construction deadlines are triggered by the filing of the parties' Infringement and Invalidity Contentions. The increase of patent cases before this Court has resulted in a large number of Claim Construction hearings and, as a result, strict application of the Patent Rules yields a P.R. 4-5 deadline approximately three months or more before Court could accommodate a Claim Construction Hearing.

To facilitate the case, resolve discovery disputes, and have claim construction hearings a reasonable time after briefing is complete, the Court modifies the deadlines in P.R. 4-1 and P.R. 4-3 as set forth below:

4-1. Exchange of Proposed Terms and Claim Elements for Construction.

(a) Not later than *140 days before the date set for the Claim Construction Hearing*, each party shall simultaneously exchange a list of claim terms, phrases, or clauses which that party contends should be construed by the Court, and identify any claim element which that party contends should be governed by 35 U.S.C. § 112(6).

4-3. Joint Claim Construction and Prehearing Statement.

Not later than *30 days after “Exchange of Preliminary Claim Constructions and Extrinsic Evidence” in compliance with P.R. 4.2*, the parties shall complete and file a Joint Claim Construction and Prehearing Statement, which shall contain the following information:

Thus, the Court’s modifications will make the trigger of P.R. 4-1 through P.R. 4-5 the date of the Claim Construction Hearing. For clarification, the Court notes that the “140 days” set forth in P.R. 4-1 was not chosen to confuse the parties but was instead chosen so as to be evenly divisible by 7. Thus, whatever the date of the Claim Construction Hearing, the deadline for complying with P.R. 4-1 will always fall on a weekday. If that weekday is a Federal Holiday, the deadline for complying with P.R. 4-1 is extended to the first day that is not a Saturday, Sunday or other Federal Holiday.

EXHIBIT

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP §
 §
V. § CIVIL NO. 2:06-CV-224(TJW)
 §
TIME WARNER CABLE, INC. §

**NOTICE OF SCHEDULING CONFERENCE,
PROPOSED DEADLINES FOR DOCKET CONTROL ORDER
AND DISCOVERY ORDER**

The court, *sua sponte*, issues this Notice of Scheduling Conference, Proposed Deadlines for Docket Control Order and Discovery Order.

Notice of Scheduling Conference

Pursuant to Fed. R. Civ. P. 16 and Local Rule CV-16, the Scheduling Conference in this case is set for **April 3, 2007, at 2:30 p.m. in Marshall, Texas.** The parties are directed to meet and confer in accordance with Fed. R. Civ. P. 26(f) prior to the conference. The parties are excused from the requirement of filing a written proposed discovery plan in this case.

Proposed Deadlines for Docket Control Order

The proposed deadlines for docket control order set forth in the attached Appendix A shall be discussed at the Scheduling Conference. The court will not modify the proposed trial date except for good cause shown.

Discovery Order

After a review of the pleaded claims and defenses in this action and in furtherance of the management of the court's docket under Fed. R. Civ. P. 16, it is ORDERED AS FOLLOWS:

1. **Disclosures.** Except as provided by paragraph 1(h), and, to the extent not already disclosed, within thirty (30) days after the Scheduling Conference, each party shall disclose to every

other party the following information:

- (a) the correct names of the parties to the lawsuit;
- (b) the name, address, and telephone number of any potential parties;
- (c) the legal theories and, in general, the factual bases of the disclosing party's claims or defenses (the disclosing party need not marshal all evidence that may be offered at trial);
- (d) the name, address, and telephone number of persons having knowledge of relevant facts, a brief statement of each identified person's connection with the case, and a brief, fair summary of the substance of the information known by any such person;
- (e) any indemnity and insuring agreements under which any person or entity carrying on an insurance business may be liable to satisfy part or all of a judgment entered in this action or to indemnify or reimburse for payments made to satisfy the judgment;
- (f) any settlement agreements relevant to the subject matter of this action;
- (g) any statement of any party to the litigation;
- (h) for any testifying expert, by the date set by the court in the Docket Control Order, each party shall disclose to the other party or parties:
 - a. the expert's name, address, and telephone number;
 - b. the subject matter on which the expert will testify;
 - c. if the witness is retained or specially employed to provide expert testimony in the case or whose duties as an employee of the disclosing party regularly involve giving expert testimony:
 - (a) all documents, tangible things, reports, models, or data compilations that have been provided to, reviewed by, or prepared by or for the

expert in anticipation of the expert's testimony; and

(b) the disclosures required by Fed. R. Civ. P. 26(a)(2)(B) and Local Rule CV-26.

d. for all other experts, the general substance of the expert's mental impressions and opinions and a brief summary of the basis for them or documents reflecting such information;

Any party may move to modify these disclosures for good cause shown.

2. **Protective Orders.** Upon the request of any party before or after the Scheduling Conference, the court shall issue the Protective Order in the form attached as Appendix B. Any party may oppose the issuance of or move to modify the terms of the Protective Order for good cause.

3. **Additional Disclosures.** In addition to the disclosures required in Paragraph 1 of this Order, at the Scheduling Conference, the court shall amend this discovery order and require each party, without awaiting a discovery request, to provide, to the extent not already provided, to every other party the following:

- (a) the disclosures required by the Patent Rules for the Eastern District of Texas;
- (b) within forty-five (45) days after the Scheduling Conference, a copy of all documents, data compilations, and tangible things in the possession, custody, or control of the party that are relevant to the case, except to the extent these disclosures are affected by the time limits set forth in the Patent Rules for the Eastern District of Texas. By written agreement of all parties, alternative forms of disclosure may be provided in lieu of paper copies. For example, the parties may agree to exchange images of documents electronically or by means of computer disk; or the parties may agree to

review and copy disclosure materials at the offices of the attorneys representing the parties instead of requiring each side to furnish paper copies of the disclosure materials;

- (c) within forty-five (45) days after the Scheduling Conference, a complete computation of any category of damages claimed by any party to the action, making available for inspection and copying as under Rule 34, the documents or other evidentiary material on which such computation is based, including materials bearing on the nature and extent of injuries suffered; and
- (d) within forty-five (45) days after the Scheduling Conference, those documents and authorizations described in Local Rule CV-34; and

The court shall order these disclosures in the absence of a showing of good cause by any party objecting to such disclosures.

- 4. **Discovery Limitations.** At the Scheduling Conference, the court shall also amend this discovery order to limit discovery in this cause to the disclosures described in Paragraphs 1 and 3 together with 60 interrogatories, 60 requests for admissions, the depositions of the parties, depositions on written questions of custodians of business records for third parties, depositions of three (3) expert witnesses per side and forty (40) hours of additional depositions per side. "Side" means a party or a group of parties with a common interest. Any party may move to modify these limitations for good cause.
- 5. **Privileged Information.** There is no duty to disclose privileged documents or information. However, the parties are directed to meet and confer concerning privileged documents or information after the Scheduling Conference. Within sixty (60) days after the Scheduling Conference, the parties shall exchange privilege logs identifying the documents or

information and the basis for any disputed claim of privilege in a manner that, without revealing information itself privileged or protected, will enable the other parties to assess the applicability of the privilege or protection. Any party may move the court for an order compelling the production of any documents or information identified on any other party's privilege log. If such a motion is made, the party asserting privilege shall respond to the motion within the time period provided by Local Rule CV-7. The party asserting privilege shall then file with the Court within thirty (30) days of the filing of the motion to compel any proof in the form of declarations or affidavits to support their assertions of privilege, along with the documents over which privilege is asserted for *in camera* inspection. If the parties have no disputes concerning privileged documents or information, then the parties shall inform the court of that fact within sixty (60) days after the Scheduling Conference.

6. **Pre-trial disclosures.** Absent a showing of good cause by any party, the court shall require the following additional disclosures:

Each party shall provide to every other party regarding the evidence that the disclosing party may present at trial as follows:

- (a) The name and, if not previously provided, the address and telephone number, of each witness, separately identifying those whom the party expects to present at trial and those whom the party may call if the need arises.
- (b) The designation of those witnesses whose testimony is expected to be presented by means of a deposition and, if not taken stenographically, a transcript of the pertinent portions of the deposition testimony.
- (c) An appropriate identification of each document or other exhibit, including summaries of other evidence, separately identifying those which the party expects to offer and

those which the party may offer if the need arises.

Unless otherwise directed by the court, these disclosures shall be made at least 30 days before trial. Within 14 days thereafter, unless a different time is specified by the court, a party may serve and file a list disclosing (1) any objections to the use under Rule 32(a) of a deposition designated by another party under subparagraph (B), and (2) any objections, together with the grounds therefor, that may be made to the admissibility of materials identified under subparagraph (c). Objections not so disclosed, other than objections under Rules 402 and 403 of the Federal Rules of Evidence, shall be deemed waived unless excused by the court for good cause shown.

7. **Signature.** The disclosures required by this order shall be made in writing and signed by the party or counsel and shall constitute a certification that, to the best of the signer's knowledge, information and belief, such disclosure is complete and correct as of the time it is made. If feasible, counsel shall meet to exchange disclosures required by this order; otherwise, such disclosures shall be served as provided by Fed. R. Civ. P. 5. The parties shall promptly file a notice with the court that the disclosures required under this order have taken place.
8. **Duty to Supplement.** After disclosure is made pursuant to this order, each party is under a duty to supplement or correct its disclosures immediately if the party obtains information on the basis of which it knows that the information disclosed was either incomplete or incorrect when made, or is no longer complete or true.
9. **Disputes.**
 - (a) Except in cases involving claims of privilege, any party entitled to receive disclosures may, after the deadline for making disclosures, serve upon a party required to make disclosures a written statement, in letter form or otherwise, of any reason why the

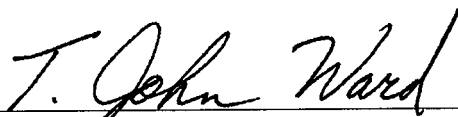
party entitled to receive disclosures believes that the disclosures are insufficient. The written statement shall list, by category, the items the party entitled to receive disclosures contends should be produced. The parties shall promptly meet and confer. If the parties are unable to resolve their dispute, then the party required to make disclosures shall, within fourteen (14) days after service of the written statement upon it, serve upon the party entitled to receive disclosures a written statement, in letter form or otherwise, which identifies (1) the requested items that will be disclosed, if any, and (2) the reasons why any requested items will not be disclosed. The party entitled to receive disclosures may thereafter file a motion to compel.

- (b) Counsel are directed to contact the chambers of the undersigned for any “hot-line” disputes before contacting the Discovery Hotline provided by Local Rule CV-26(e). If the undersigned is not available, the parties shall proceed in accordance with Local Rule CV-26(e).

10. **No Excuses.** A party is not excused from the requirements of this Discovery Order because it has not fully completed its investigation of the case, or because it challenges the sufficiency of another party’s disclosures, or because another party has not made its disclosures. Absent court order to the contrary, a party is not excused from disclosure because there are pending motions to dismiss, to remand or to change venue.
11. **Filings.** Any filings in excess of twenty (20) pages, counsel is directed to provide a courtesy copy to Chambers, simultaneously with the date of filing.

12. **Modifications to Patent Rules.** The attached Appendix C applies to this case and supplements the Patent Rules for the Eastern District of Texas. These modifications are not intended to apply to any other case except as may be expressly provided by order of this Court.

SIGNED this 14th day of March, 2007.



T. JOHN WARD
UNITED STATES DISTRICT JUDGE

APPENDIX A

PROPOSED DEADLINES FOR DOCKET CONTROL ORDER

**PROPOSED DEADLINES TO BE DISCUSSED
AT THE SCHEDULING CONFERENCE
APRIL 3, 2007**

**Monday,
August 4, 2008**

Jury Selection - 9:00 a.m. in **Marshall, Texas**

July 24, 2008

Pretrial Conference - 11:00 a.m. in **Marshall, Texas**

July 21, 2008

Joint Pretrial Order, Joint Proposed Jury Instructions and Form of the Verdict.

July 21, 2008

Motions in Limine (due three days before final Pre-Trial Conference).

Three (3) days prior to the pre-trial conference provided for herein, the parties shall furnish a copy of their respective Motions in Limine to the Court by facsimile transmission, **903/935-2295**. The parties are directed to confer and advise the Court on or before 3:00 o'clock p.m. the day before the pre-trial conference which paragraphs are agreed to and those that need to be addressed at the pre-trial conference. **The parties shall limit their motions in limine to those issues which, if improperly introduced into the trial of the cause, would be so prejudicial that the Court could not alleviate the prejudice with appropriate instruction(s).**

July 14, 2008

Response to Dispositive Motions (including *Daubert* motions)

July 7, 2008

Notice of Request for Daily Transcript or Real Time Reporting of Court Proceedings. If a daily transcript or real time reporting of court proceedings is requested for trial, the party or parties making said request shall file a notice with the Court and e-mail the Court Reporter, Susan Simmons, at lssimmons@yahoo.com.

June 27, 2008

For Filing Dispositive Motions and any other motions that may require a hearing (including *Daubert* motions)
Responses to dispositive motions filed prior to the dispositive motion deadline, including *Daubert* Motions, shall be due in accordance with Local Rule CV-7(e). Motions for Summary Judgment shall comply with Local Rule CV56.

May 28, 2008

Defendant to Identify Trial Witnesses

May 14, 2008

Plaintiff to Identify Trial Witnesses

May 14, 2008

Discovery Deadline

30 Days after claim construction ruling
Designate Rebuttal Expert Witnesses other than claims construction
Expert witness report due
Refer to Discovery Order for required information.

15 Days after claim construction ruling
Comply with P.R. 3-8.

15 Days after claim construction ruling
Party with the burden of proof to designate Expert Witnesses other than claims construction
Expert witness report due
Refer to Discovery Order for required information.

February 13, 2008

Claim construction hearing 9:00 a.m., **Marshall, Texas.**

January 22, 2008

Comply with P.R. 4-5(c).

January 14, 2008

Comply with P.R. 4-5(b).

December 31, 2007	Comply with P.R. 4-5(a).
December 7, 2007	Discovery deadline—claims construction issues
November 30, 2007	Respond to Amended Pleadings
November 16, 2007	Amend Pleadings (It is not necessary to file a Motion for Leave to Amend before the deadline to amend pleadings except to the extent the amendment seeks to add a new patent in suit. It is necessary to file a Motion for Leave to Amend after November 16, 2007).
November 16, 2007	Comply with P.R. 4-3.
October 16, 2007	Comply with P.R. 4-2.
September 26, 2007	Comply with P.R. 4-1.
May 18, 2007	Comply with P.R. 3-3.
June 4, 2007	Privilege Logs to be exchanged by parties (or a letter to the Court stating that there are no disputes as to claims of privileged documents).
May 3, 2007	Join Additional Parties
April 13, 2007	Comply with P.R. 3-1

**To be discussed at
Scheduling Conference**

Mediation to be completed

If the parties agree that mediation is an option, the Court will appoint a mediator or the parties will mutually agree upon a mediator. If the parties choose the mediator, they are to inform the Court by letter the name and address of the mediator. The courtroom deputy will immediately mail out a "mediation packet" to the mediator for the case. The mediator shall be deemed to have agreed to the terms of Court Ordered Mediation Plan of the United States District Court of the Eastern District of Texas by going forth with the mediation. General Order 99-2.

April 3, 2007

Scheduling Conference (All attorneys are directed to Local Rule CV-16 for scope of the Scheduling Conference).

The parties are directed to Local Rule CV-7(d), which provides in part that "[i]n the event a party fails to oppose a motion in the manner prescribed herein the court will assume that the party has no opposition." Local Rule CV-7(e) provides that a party opposing a motion has **12 days, in addition to any added time permitted under Fed. R. Civ. P. 6(e)**, in which to serve and file a response and any supporting documents, after which the court will consider the submitted motion for decision.

OTHER LIMITATIONS

1. All depositions to be read into evidence as part of the parties' case-in-chief shall be **EDITED** so as to exclude all unnecessary, repetitious, and irrelevant testimony; **ONLY** those portions which are relevant to the issues in controversy shall be read into evidence.
2. The Court will refuse to entertain any motion to compel discovery filed after the date of this Order unless the movant advises the Court within the body of the motion that counsel for the parties have first conferred in a good faith attempt to resolve the matter. See Eastern District of Texas Local Rule CV-7(h).
3. The following excuses will not warrant a continuance nor justify a failure to comply with the discovery deadline:
 - (a) The fact that there are motions for summary judgment or motions to dismiss pending;

- (b) The fact that one or more of the attorneys is set for trial in another court on the same day, unless the other setting was made prior to the date of this order or was made as a special provision for the parties in the other case;
- (c) The failure to complete discovery prior to trial, unless the parties can demonstrate that it was impossible to complete discovery despite their good faith effort to do so.

APPENDIX B

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP §
 §
V. § CIVIL NO. 2:06-CV-224(TJW)
 §
TIME WARNER CABLE, INC. §

STANDARD PROTECTIVE ORDER

The Court, *sua sponte*, issues this Protective Order to facilitate document disclosure and production under the Local Rules of this Court and the Federal Rules of Civil Procedure. Unless modified pursuant to the terms contained in this Order, this Order shall remain in effect through the conclusion of this litigation.

In support of this order, the court finds that:

1. Documents or information containing confidential proprietary and business information and/or trade secrets (“Confidential Information”) that bear significantly on the parties’ claims or defenses is likely to be disclosed or produced during the course of discovery in this litigation;
2. The parties to this litigation may assert that public dissemination and disclosure of Confidential Information could severely injure or damage the party disclosing or producing the Confidential Information and could place that party at a competitive disadvantage;
3. Counsel for the party or parties receiving Confidential Information are presently without sufficient information to accept the representation(s) made by the party or parties producing Confidential Information as to the confidential, proprietary, and/or trade secret nature of such Confidential Information; and

4. To protect the respective interests of the parties and to facilitate the progress of disclosure and discovery in this case, the following Order should issue:

IT IS THEREFORE ORDERED THAT:

1. Documents or discovery responses containing Confidential Information disclosed or produced by any party in this litigation are referred to as "Protected Documents." Except as otherwise indicated below, all documents or discovery responses designated by the producing party as "Confidential" and which are disclosed or produced to the attorney's for the other parties to this litigation are Protected Documents and are entitled to confidential treatment as described below.
2. Protected Documents shall not include (a) advertising materials, (b) materials that on their face show that they have been published to the general public, or (c) documents that have submitted to any governmental entity without request for confidential treatment.
3. At any time after the delivery of Protected Documents, counsel for the party or parties receiving the Protected Documents may challenge the Confidential designation of all or any portion thereof by providing written notice thereof to counsel for the party disclosing or producing the Protected Documents. If the parties are unable to agree as to whether the confidential designation of discovery material is appropriate, the party or parties receiving the Protected Documents shall certify to the Court that the parties cannot reach an agreement as to the confidential nature of all or a portion of the Protected Documents. Thereafter, the party or parties disclosing or producing the Protected Documents shall have ten (10) days from the date of certification to file a motion for protective order with regard to any Protected Documents in dispute. The party or parties producing the Protected Documents shall have the burden of establishing that the disputed Protected Documents are entitled to confidential

treatment. If the party or parties producing the Protected Documents do not timely file a motion for protective order, then the Protected Documents in dispute shall no longer be subject to confidential treatment as provided in this Order. All Protected Documents are entitled to confidential treatment pursuant to the terms of this Order until and unless the parties formally agree in writing to the contrary, a party fails to timely move for a protective order, or a contrary determination is made by the Court as to whether all or a portion of a Protected Document is entitled to confidential treatment.

4. Confidential Treatment. Protected Documents and any information contained therein shall not be used or shown, disseminated, copied, or in any way communicated to anyone for any purpose whatsoever, except as provided for below.
5. Protected Documents and any information contained therein shall be disclosed only to the following persons ("Qualified Persons"):
 - (a) Counsel of record in this action for the party or party receiving Protected Documents or any information contained therein;
 - (b) Employees of such counsel (excluding experts and investigators) assigned to and necessary to assist such counsel in the preparation and trial of this action; and
 - (c) The Court.

Protected Documents and any information contained therein shall be used solely for the prosecution of this litigation.

6. Counsel of record for the party or parties receiving Protected Documents may create an index of the Protected Documents and furnish it to attorneys of record representing or having represented parties involved in litigation involving the claims alleged in this suit against the party or parties disclosing or producing the Protected Documents. The index may only identify the document, date, author, and general subject matter of any Protected Document,

but may not reveal the substance of any such document. Counsel for the party or parties receiving Protected Documents shall maintain a current log of the names and addresses of persons to whom the index was furnished.

7. The term “copy” as used herein means any photographic, mechanical or computerized copy or reproduction of any document or thing, or any verbatim transcript, in whole or in part, of such document or thing.
8. To the extent that Protected Documents or information contained therein are used in depositions, at hearings, or at trial, such documents or information shall remain subject to the provisions of this Order, along with the transcript pages of the deposition testimony and/or trial testimony referring to the Protected Documents or information contained therein.
9. Any court reporter or transcriber who reports or transcribes testimony in this action shall agree that all “confidential” information designated as such under this Order shall remain “confidential” and shall not be disclosed by them, except pursuant to the terms of this Order, and that any notes or transcriptions of such testimony (and any accompanying exhibits) will be retained by the reporter or delivered to counsel of record.
10. Inadvertent or unintentional production of documents or information containing Confidential Information which are not designated “confidential” shall not be deemed a waiver in whole or in part of a claim for confidential treatment.
11. The party or parties receiving Protected Documents shall not under any circumstances sell, offer for sale, advertise, or publicize Protected Documents or any information contained therein.
12. After termination of this litigation, the provisions of this Order shall continue to be binding, except with respect to those documents and information that become a matter of public

record. This Court retains and shall have continuing jurisdiction over the parties and recipients of the Protected Documents for enforcement of the provisions of this Order following termination of this litigation.

13. Upon termination of this action by dismissal, judgment, or settlement, counsel for the party or parties receiving Protected Documents shall return the Protected Documents to the counsel for the party or parties disclosing or producing the Protected Documents. The party or parties receiving the Protected Documents shall keep their attorney work product which refers or relates to any Protected Documents. Attorney work product may be used in subsequent litigation provided that such use does not disclose Protected Documents or any information contained therein.
 14. This Order shall be binding upon the parties and their attorneys, successors, executors, personal representatives, administrators, heirs, legal representatives, assigns, subsidiaries, divisions, employees, agents, independent contractors, or other persons or organizations over which they have control.
 15. The Court anticipates and encourages the parties to file a motion to modify the terms hereof with respect to the sharing of Protected Documents with experts and consultants; shifting the cost burden of production equitably; and other terms that may be reasonably required to protect a party as provided in Rule 26(b) or (c) of the Federal Rules of Civil Procedure.
- So ORDERED AND SIGNED this _____ day of _____, 2007.

T. JOHN WARD
UNITED STATES DISTRICT JUDGE

APPENDIX C

ORDER RELATING TO PATENT CASES BEFORE JUDGE T. JOHN WARD

The Court issues certain modifications to the Eastern District Patent Rules. The modifications relate to three issues: (1) Notice Requirements, (2) Infringement and Invalidity Contentions for Software, and (3) Deadlines Related to Claim Construction.

I. Notice Requirements

The Court has seen a dramatic increase in the number of disputes related to parties serving “supplemental,” “additional,” or “revised” P.R. 3-1 or P.R. 3-3 disclosures. In the past, parties were not required to provide notice to the Court regarding compliance with P.R. 3-1 or P.R. 3-3. Thus, certain parties attempted to avoid the rule that Preliminary Contentions are final except as provided in P.R. 3-6 and P.R. 3-7. Accordingly, the Court modifies P.R. 3-1 and P.R. 3-3 in the following manner:

P.R. 3-1(g): Any time a party claiming patent infringement serves Preliminary Infringement Contentions on an opposing party, the party claiming patent infringement shall also file with the Court a Notice of Compliance with P.R. 3-1.

P.R. 3-3(e): Any time a party opposing patent infringement serves Preliminary Invalidity Contentions on an opposing party, the party opposing patent infringement shall also file with the Court a Notice of Compliance with P.R. 3-3.

Under this Court’s interpretation of the Patent Rules, leave of Court is required for serving “amended,” “supplemental,” or “revised” P.R. 3-1 or P.R. 3-3 disclosures. The Court will strike “amendments,” “supplements,” or “revisions” of P.R. 3-1 or P.R. 3-3 disclosures that do not comply with P.R. 3-6 or P.R. 3-7.

II. Infringement and Invalidity Contentions for Software

Additional modifications to the Patent Rules regarding P.R. 3-1 and P.R. 3-3 are being made

to reduce discovery disputes and motion practice resulting from patents that contain software claim limitations. The Patent Rules require a party asserting claims of patent infringement to take a firm position in the litigation as it relates to infringement early on in the case. This and other courts in the Eastern District of Texas, however, recognize that software claim limitations present unique challenges for the parties because parties claiming patent infringement do not typically have access to an opposing party's source code before filing suit. At the same time, parties opposing a claim for patent infringement are hampered in their ability to prepare a defense absent specific infringement contentions from the party asserting claims of patent infringement.

The lack of access to source code coupled with an opponent's right to prepare a defense has led to numerous discovery disputes. To alleviate these disputes and to provide clear direction to the parties as to their rights and responsibilities under the Patent Rules, the Court modifies the Patent Rules in a manner consistent with such cases as *American Video Graphics, L.P. v. Electronic Arts, Inc.*, 359 F. Supp. 2d 558 (E.D. Tex. 2005).

The Court's modifications to P.R. 3-1 and P.R. 3-3 are set out below.

P.R. 3-1 (h): If a party claiming patent infringement asserts that a claim element is a software limitation, the party need not comply with P.R. 3-1 for those claim elements until 30 days after source code for each Accused Instrumentality is produced by the opposing party. Thereafter, the party claiming patent infringement shall identify, on an element-by-element basis for each asserted claim, what source code of each Accused Instrumentality allegedly satisfies the software limitations of the asserted claim elements.

P.R. 3-3(f): If a party claiming patent infringement exercises the provisions of P.R. 3-1(g), the party opposing a claim of patent infringement may serve, not later than 30 days after receipt of a P.R. 3-1(g) disclosure, supplemental "Preliminary Invalidity Contentions" that amend only those claim elements identified as software limitations by the party claiming patent infringement.

Thus, if a party claiming patent infringement asserts that a claim element (or the entire claim) is software, that party need only identify the element as a software limitation in its initial compliance

with P.R. 3-1, but does not need to identify where such limitation is met in the Accused Instrumentality. After receipt of the source code for an Accused Instrumentality, the party is permitted 30 days to supplement its P.R. 3-1 disclosure to identify, with specificity, the source code of the Accused Instrumentality that allegedly satisfies the software claim elements. P.R. 3-1(g) does not allow Plaintiff the opportunity to modify or amend any non-software claim contentions.

Likewise, once a party opposing a claim of patent infringement is in receipt of a P.R. 3-1(g) disclosure, the party is allowed 30 days to modify its initial P.R. 3-3 disclosures, but only to the extent the modifications relate to the software claim elements identified by the party claiming patent infringement. P.R. 3-3(e) does not allow a party opposing a claim of infringement an opportunity to modify or amend any non-software contentions.

III. Claim Construction Deadlines

The final amendments to the Patent Rules relate to claim construction deadlines. In the Eastern District Patent Rules, claim construction deadlines are triggered by the filing of the parties' Infringement and Invalidity Contentions. The increase of patent cases before this Court has resulted in a large number of Claim Construction hearings and, as a result, strict application of the Patent Rules yields a P.R. 4-5 deadline approximately three months or more before Court could accommodate a Claim Construction Hearing.

To facilitate the case, resolve discovery disputes, and have claim construction hearings a reasonable time after briefing is complete, the Court modifies the deadlines in P.R. 4-1 and P.R. 4-3 as set forth below:

4-1. Exchange of Proposed Terms and Claim Elements for Construction.

(a) Not later than *140 days before the date set for the Claim Construction Hearing*, each party shall simultaneously exchange a list of claim terms, phrases, or clauses which that party contends should be construed by the Court, and identify any claim element which that party contends should be governed by 35 U.S.C. § 112(6).

4-3. Joint Claim Construction and Prehearing Statement.

Not later than *30 days after “Exchange of Preliminary Claim Constructions and Extrinsic Evidence” in compliance with P.R. 4.2*, the parties shall complete and file a Joint Claim Construction and Prehearing Statement, which shall contain the following information:

Thus, the Court’s modifications will make the trigger of P.R. 4-1 through P.R. 4-5 the date of the Claim Construction Hearing. For clarification, the Court notes that the “140 days” set forth in P.R. 4-1 was not chosen to confuse the parties but was instead chosen so as to be evenly divisible by 7. Thus, whatever the date of the Claim Construction Hearing, the deadline for complying with P.R. 4-1 will always fall on a weekday. If that weekday is a Federal Holiday, the deadline for complying with P.R. 4-1 is extended to the first day that is not a Saturday, Sunday or other Federal Holiday.

EXHIBIT

4

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-635 GMS

CABLEVISION SYSTEMS CORP. :

COXCOM, INC. :

v. : Civil Action No. 06-721 GMS

REMBRANDT TECHNOLOGIES LP :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-727 GMS

CBS CORPORATION :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-729 GMS

NBC UNIVERSAL INC. :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-730 GMS

ABC, INC. :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-731 GMS

FOX ENTERTAINMENT GROUP, INC. :

ORDER STAYING CIVIL ACTIONS

WHEREAS, the above-captioned civil actions were filed in the United States District Court for the District of Delaware and assigned to the Honorable Gregory M. Sleet;

WHEREAS, on or about March 13, 2007, a Motion for Transfer and Consolidation of the Rembrandt Technologies LP Patent Litigation (the "Motion") was filed before the Judicial Panel on Multidistrict Litigation; and

WHEREAS, the court concludes that it is in the interest of justice and judicial economy to stay the above-captioned cases until the Motion is resolved;

IT IS HEREBY ORDERED that:

The above-captioned cases are hereby STAYED pending resolution of the Motion for Transfer and Consolidation currently pending before the Judicial Panel on Multidistrict Litigation.

March 26, 2007

/s/ Gregory M. Sleet
UNITED STATES DISTRICT JUDGE

EXHIBIT

5

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP	§	
	§	
V.	§	CIVIL NO. 2:06-CV-47(TJW)
	§	
SHARP CORPORATION and	§	
SHARP ELECTRONICS CORP.	§	

DOCKET CONTROL ORDER

In accordance with the case scheduling conference held herein on the 20th day of February, 2007, it is hereby

ORDERED that the following schedule of deadlines is in effect until further order of this court:

Monday, June 2, 2008	Jury Selection - 9:00 a.m. in Marshall, Texas
May 22, 2008	Pretrial Conference - 9:30 a.m. in Marshall, Texas
May 16, 2008	Joint Pretrial Order, Joint Proposed Jury Instructions and Form of the Verdict.
May 19, 2008	Responses to motions in limine due
May 12, 2008	Motions in Limine (due three days before final Pre-Trial Conference).

Three (3) days prior to the pre-trial conference provided for herein, the parties shall furnish a copy of their respective Motions in Limine to the Court by facsimile transmission, **903/935-2295**. The parties are directed to confer and advise the Court on or before 3:00 o'clock p.m. the day before the pre-trial conference which paragraphs are agreed to and those that need to be addressed at the pre-trial conference. **The**

parties shall limit their motions in limine to those issues which, if improperly introduced into the trial of the cause, would be so prejudicial that the Court could not alleviate the prejudice with appropriate instruction(s).

May 5, 2008

Video Deposition Designation

May 2, 2008

Notice of Request for Daily Transcript or Real Time Reporting of Court Proceedings. If a daily transcript or real time reporting of court proceedings is requested for trial, the party or parties making said request shall file a notice with the Court and e-mail the Court Reporter, Susan Simmons, at lssimmons@yahoo.com.

April 25, 2008

Response to Dispositive Motions (including *Daubert* motions)¹

Responses to dispositive motions filed prior to the dispositive motion deadline, including *Daubert* Motions, shall be due in accordance with Local Rule CV-7(e). Motions for Summary Judgment shall comply with Local Rule CV56.

April 11, 2008

Deadline for Filing Dispositive Motions and any other motions that may require a hearing (including *Daubert* motions)

April 18, 2008

Mediation to be completed

April 11, 2008

Parties to identify rebuttal witness

¹

The parties are directed to Local Rule CV-7(d), which provides in part that “[i]n the event a party fails to oppose a motion in the manner prescribed herein the court will assume that the party has no opposition.” Local Rule CV-7(e) provides that a party opposing a motion has **12 days, in addition to any added time permitted under Fed. R. Civ. P. 6(e)**, in which to serve and file a response and any supporting documents, after which the court will consider the submitted motion for decision.

April 4, 2008	Parties to identify trial witness on issues for which they bear the burden of proof
February 19, 2008	Plaintiff to Identify Trial Witnesses
April 4, 2008	Discovery Deadline
March 14, 2008, or 60 days after claim construction ruling, whichever date is later.	Designate Rebuttal Expert Witnesses other than claims construction Expert witness report due Refer to Discovery Order for required information.
February 15, 2008, or 30 days after claim construction ruling, whichever date is later.	Comply with P.R. 3-8.
February 15, 2008, or 30 days after claim construction ruling, whichever date is later.	Party with the burden of proof to designate Expert Witnesses other than claims construction Expert witness report due Refer to Discovery Order for required information.
November 20, 2007	Claim construction hearing 9:00 a.m., Marshall, Texas.
November 2, 2007	Submit technical tutorials to the Court.
October 26, 2007	Comply with P.R. 4-5(c).
October 19, 2007	Comply with P.R. 4-5(b).
October 5, 2007	Comply with P.R. 4-5(a).
September 12, 2007	Discovery deadline

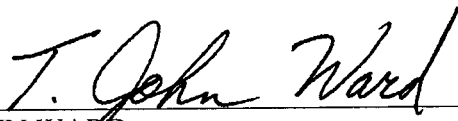
September 5, 2007	Respond to Amended Pleadings
August 22, 2007	Amend Pleadings (It is not necessary to file a Motion for Leave to Amend before the deadline to amend pleadings except to the extent the amendment seeks to add a new patent in suit. It is necessary to file a Motion for Leave to Amend after August 22, 2007).
August 22, 2007	Comply with P.R. 4-3.
July 23, 2007	Comply with P.R. 4-2.
July 3, 2007	Comply with P.R. 4-1.
June 11, 2007	Privilege Logs to be exchanged by parties
April 27, 2007	Join Additional Parties
May 2, 2007	Comply with P.R. 3-3 and P.R. 3-4.
April 2, 2007	Comply with P.R. 3-1 and P.R. 3-2.

IT IS FURTHER ORDERED that the parties shall submit the name, address, telephone number, and fax number of an agreed mediator to the Court within thirty (30) days from the date of the Scheduling Conference. If the parties are unable to agree, the Court will appoint a mediator in the above referenced case.

OTHER LIMITATIONS

1. All depositions to be read into evidence as part of the parties' case-in-chief shall be **EDITED** so as to exclude all unnecessary, repetitious, and irrelevant testimony; **ONLY** those portions which are relevant to the issues in controversy shall be read into evidence.
2. The Court will refuse to entertain any motion to compel discovery filed after the date of this Order unless the movant advises the Court within the body of the motion that counsel for the parties have first conferred in a good faith attempt to resolve the matter. See Eastern District of Texas Local Rule CV-7(h).
3. The following excuses will not warrant a continuance nor justify a failure to comply with the discovery deadline:
 - (a) The fact that there are motions for summary judgment or motions to dismiss pending;
 - (b) The fact that one or more of the attorneys is set for trial in another court on the same day, unless the other setting was made prior to the date of this order or was made as a special provision for the parties in the other case;
 - (c) The failure to complete discovery prior to trial, unless the parties can demonstrate that it was impossible to complete discovery despite their good faith effort to do so.

SIGNED this 8th day of March, 2007.



T. JOHN WARD
UNITED STATES DISTRICT JUDGE

EXHIBIT

6

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

COXCOM, INC.

Plaintiff,

v.

REMBRANDT TECHNOLOGIES, LP

Defendant.

C.A. No. 06-721-GMS

**REMBRANDT TECHNOLOGIES, L.P.'S OPENING BRIEF IN SUPPORT
OF ITS MOTION TO DISMISS PURSUANT TO FEDERAL RULE 12(b)(1)**

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Dated: January 26, 2007

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INTRODUCTION AND SUMMARY OF THE ARGUMENT

On November 30, 2006, plaintiff CoxCom, Inc. (“CoxCom”) filed the above-captioned Declaratory Judgment action against defendant Rembrandt Technologies, L.P. (“Rembrandt”) seeking a judgment that U.S. Patent No. 5,008,903 (“the ‘903 patent”) owned by Rembrandt is not infringed, invalid and/or unenforceable. However, CoxCom’s action was filed without justification and should be dismissed.

Rembrandt never mentioned the ‘903 patent to CoxCom, much less threatened it with the ‘903 patent, before CoxCom filed this lawsuit. Even if the facts alleged by CoxCom were true, they do not meet the stringent legal standards required for finding declaratory judgment jurisdiction.

CoxCom does not (and cannot) allege sufficient facts supporting an objectively reasonable apprehension that Rembrandt would sue it on the ‘903 patent, as required for jurisdiction under the Declaratory Judgment Act, 28 U.S.C. § 2201. It is true that Rembrandt owns a large portfolio of patents and has brought enforcement actions with respect to some of those patents against selected infringers. Not even CoxCom, however, would argue that those facts alone can establish its right to sue Rembrandt based on declaratory judgment jurisdiction. Thus, CoxCom’s argument essentially is that if Rembrandt owns the ‘903, and it has previously sued CoxCom on a different patent, and also sued others with respect to the ‘903, CoxCom is entitled to assume that Rembrandt intends to sue it on the ‘903, notwithstanding the lack of any evidence that it intends to do so. As a matter of law, this is insufficient to establish declaratory judgment jurisdiction.

Even assuming that CoxCom could somehow justify its apprehension of an imminent suit on the ‘903 patent, this Court should exercise its discretion in dismissing this case. CoxCom has the opportunity to assert its claims against the ‘903 patent in a case between Rembrandt and

CoxCom pending in the Eastern District of Texas involving four other patents, with the '903 having been added after CoxCom filed this action. It undoubtedly would be more efficient for the parties and the judicial system if the '903 patent is litigated in the Texas action, allowing the disputes between Rembrandt and CoxCom to be decided in a single case. For this independent reason, Rembrandt asks the Court to exercise its discretion in dismissing this case.

For these and the reasons that follow, Rembrandt respectfully requests that this Court dismiss this improper lawsuit pursuant to Rule 12(b)(1) of the Federal Rules of Civil Procedure and, alternatively, the Court's discretionary authority under the Declaratory Judgment Act.

FACTUAL BACKGROUND

The Parties. Rembrandt owns approximately 175 patents, a portion of which originated from the patent portfolio of AT&T Paradyne, which for decades was a leading innovator in the field of high speed digital communications systems. Engineers at AT&T Paradyne have been awarded hundreds of patents, many of which reflect seminal developments in the telecommunications field, including the '903 patent.

CoxCom is a cable service producer which offers various cable services to its subscribers including television, telephone and Internet services. (D.I. 1 at ¶ 6). The '903 patent generally relates to improved techniques for transmitting data over cable systems such as CoxCom's, and covers CoxCom's cable Internet services.

The Texas Litigation Against CoxCom. Prior to the filing of this action, on June 1, 2006, Rembrandt filed a complaint in the United States District Court for the Eastern District of Texas against three cable companies: Charter Communications, Inc. and its affiliate ("Charter"), CoxCom, Inc, and its affiliates ("CoxCom"), and Cablevision Systems Corporation and its affiliate ("Cablevision") (the "first action"). This was Rembrandt's first, and only, lawsuit

against CoxCom prior to this litigation. Rembrandt sued to enforce four of its AT&T Paradyne patents, but did not include the '903 patent. Discovery in that action has not yet begun.

On November 30, 2006, CoxCom filed this declaratory judgment action on one patent, the '903 patent. On the same day CoxCom filed this lawsuit, Rembrandt filed a second action against Charter and CoxCom in the Eastern District of Texas on four additional cable system patents; but again, that action ("the second action") did not include the '903 patent. Upon learning that CoxCom filed this declaratory judgment action on the '903 patent in Delaware, Rembrandt was forced, as a prophylactic measure, to amend its Complaint in the second action to include the '903 patent, which it did the next day, December 1, 2006. Thus, the second action against Charter and CoxCom in Texas, filed only hours after CoxCom's Delaware case, now includes the '903 patent in addition to the other four patents initially asserted in the case. Discovery in the second action has not yet begun either.

In summary, Rembrandt has two separate pending actions against CoxCom in Texas on two different sets of patents. The '903 patent was subsequently added to the second Texas action as a result of CoxCom's declaratory judgment action here. Of the nine patents presently at issue between the parties in these three cases, CoxCom's declaratory judgment action in Delaware includes only the '903 patent. All three cases are still in the preliminary stages and discovery has not yet begun in any of the cases between Rembrandt and CoxCom.

Rembrandt's Cable Patent Litigation Against Others. CoxCom's declaratory judgment action purports to rest, in part, on other lawsuits by Rembrandt against other companies. In addition to enforcing its patent rights against CoxCom, Rembrandt has sought similar redress against other cable companies. On September 13, 2006, Rembrandt sued Time Warner in Texas on five patents, including the '903 patent. Nevertheless, as noted above, no

action on the '903 was asserted against CoxCom. The litigation against Time Warner on the '903 patent was filed two and half months before CoxCom's declaratory judgment action.

Subsequently, on October 13, 2006, Rembrandt brought an action in Delaware against Cablevision on the same four patents brought against CoxCom in the first action plus the '903 patent. Again, no action on the '903 was asserted against CoxCom. This case was filed six weeks before CoxCom's declaratory judgment action.

Based on solely these facts, CoxCom alleges that it had an objectively reasonable apprehension that a lawsuit by Rembrandt on the '903 patent was imminent. (D.I. 1 at ¶ 19). Rembrandt never threatened to sue CoxCom on the '903 patent prior to this litigation and did not sue CoxCom on the '903 patent when it sued other companies on that patent. Despite the fact that CoxCom delayed two and a half months after Rembrandt sued Time Warner on the '903 and other patents,¹ and, that when CoxCom did bring this action, brought it only with respect to the '903, CoxCom now expects this Court to entertain this improper, and now duplicative, declaratory judgment action.

ARGUMENT

I. THE COURT LACKS DECLARATORY JUDGMENT JURISDICTION OVER COXCOM'S CLAIMS

A. Legal Standards for Declaratory Judgment Jurisdiction

1. CoxCom Has the Burden of Proof on This Legal Issue.

The declaratory judgment plaintiff bears the burden of proving the existence of facts underlying its allegations of the existence of an actual controversy. *Jervis B. Webb Co. v. S. Sys., Inc.*, 742 F.2d 1388, 1399 (Fed. Cir. 1984). "To constitute an actual controversy, the plaintiff

¹ CoxCom also knew that, notwithstanding Rembrandt's October 13, 2006 action against Cablevision, in the more than six weeks which preceded the filing of this action, Rembrandt had not sued it on the '903.

has the burden of establishing by a preponderance of the evidence, *inter alia*, that it has a reasonable apprehension that it will be sued.” *Shell Oil Co. v. Amoco Corp.* 970 F.2d 885, 887 (Fed. Cir. 1992). Determination of the legal effect of the parties’ conduct under this test is a matter of law for the Court to decide. *Id.* at 889.

2. CoxCom Had No Reasonable Apprehension of Suit on the ‘903.

Consistent with Article III of the Constitution, the Declaratory Judgment Act (the “Act”) confers jurisdiction to federal courts only in cases of “actual controversy.” 28 U.S.C. § 2201; *Gen-Prove, Inc. v. Vysis, Inc.*, 359 F.3d 1376, 1379 (Fed. Cir. 2004), *cert. dismissed*, 543 U.S. 941 (2004). The Act seeks to strike a delicate balance between enabling accused infringers to resolve uncertainty created by real threats from patentees, while at the same time protecting “quiescent patent owners against unwarranted litigation.” *Teva Pharmaceuticals USA, Inc. v. Pfizer, Inc.*, 395 F.3d 1324, 1333 (Fed. Cir. 2005), *cert. denied*, 126 S. Ct. 473 (2005). Thus, the court must draw a “line between cases in which the parties have adverse interests and cases in which those adverse interests have ripened into a dispute that may properly be deemed a controversy.” *EMC Corp. v. Norand Corp.*, 89 F.3d 807, 811 (Fed. Cir. 1996).

Accordingly, before a court may exercise jurisdiction over a declaratory judgment action, the Act requires an “actual controversy between the parties.” *Id.* at 810. However, “more is required for an actual controversy than the existence of an adversely held patent. . . .” *Teva*, 395 at 1333. Federal Circuit law governs a court’s review as to whether an actual controversy exists under the Declaratory Judgment Act when the underlying merits of an action involve patent infringement and/or validity. *Microchip Technology, Inc. v. Chamberlain Group, Inc.*, 441 F.3d 936, 941 (Fed. Cir. 2006). In making the determination of whether an actual controversy exists, the court must decide whether the defendant had a reasonable apprehension of suit and whether such apprehension was *objectively* reasonable. A “subjective apprehension of an infringement

suit is insufficient to satisfy the actual controversy requirement.” *Indium Corp. v. Semi-Alloys, Inc.*, 781 F.2d 879, 883 (Fed. Cir. 1985). A two part test has been formulated by the Federal Circuit to determine whether an objectively reasonable apprehension of suit exists. There must be both:

- (1) an explicit threat or other action by the patentee which creates a reasonable apprehension on the part of the declaratory judgment plaintiff that it will face an infringement suit, and
- (2) present activity by the declaratory judgment plaintiff which could constitute infringement, or concrete steps taken with the intent to conduct such activity.”

Teva, 395 at 1332.

For purposes of this Motion, only the first prong of this test is at issue; Rembrandt does not dispute that the second prong is met. It is also, however, beyond dispute that Rembrandt has never made an explicit threat to CoxCom regarding the ‘903 patent. Therefore, the only issue is whether CoxCom objectively had a reasonable apprehension of a lawsuit on the ‘903 patent that is legally cognizable under the Declaratory Judgment Act. In circumstances like this, the Federal Circuit has stated that when “the defendant’s conduct, including its statements, falls short of an express charge, one must consider the ‘totality of the circumstances’ in determining whether that conduct meets the first prong of the test.” *Arrowhead Indus. Water, Inc. v. Ecolchem, Inc.*, 846 F.2d 731, 736 (Fed. Cir. 1988). Furthermore, it has been clarified that a declaratory judgment plaintiff must not only have a reasonable apprehension that the patentee will sue it for infringement, but also that the lawsuit is “*imminent*.” *Teva*, 395 at 1333 (emphasis original).²

² Although the Supreme Court has recently commented on the Federal Circuit’s “reasonable apprehension of an imminent suit test” as set forth in *Teva*, such commentary was dicta and neither *Teva* nor the reasonable apprehension test were overruled. See *Medimmune, Inc. v. Genentech, Inc.*, 549 U.S. —, fn.11, 81 U.S.P.Q. 2d 1225, fn.11 (Jan. 9, 2007). Furthermore, no new test was proposed and, therefore, the test set forth in *Teva* remains controlling law as to this issue.

3. Jurisdiction has to exist at the time of the filing of the complaint.

When analyzing the totality of the circumstances, “the court must test the existence of jurisdiction as of the time the complaint was filed.” *Positec USA Inc. v. Milwaukee Electric Tool Corp.*, 2006 WL 2726728 (D. Del. 2006)³ (citing *Lang v. Pacific Marine & Supply Co.*, 895 F.2d 761, 764 (Fed. Cir. 1990)). “Activities that occurred subsequent to the filing of the complaint may not be considered since jurisdiction, if it exists, must be established as of the date of the filing of the declaratory judgment action.” *Millipore Corp. v. University Patents, Inc.*, 682 F. Supp. 227, 231 (D. Del. 1987) (citing *Jervis B. Webb Co. v. S. Sys., Inc.*, 742 F.2d 1388, 1398 (Fed. Cir. 1984)). Moreover, “even assuming [the existence of] an actual controversy, the exercise of a court’s jurisdiction over a declaratory judgment action is discretionary.” *Telectronics Pacing Sys., Inc. v. Ventritex, Inc.*, 982 F.2d 1520, 1526 (Fed. Cir. 1992) (citations omitted).

In summary, to demonstrate that this Court has declaratory judgment jurisdiction, CoxCom must identify specific acts by Rembrandt prior to the initiation of this lawsuit that would have led an objective observer to the reasonable conclusion that a lawsuit by Rembrandt on the ‘903 patent was imminent. The facts of this case do not meet this legal threshold and, therefore, CoxCom’s case must be dismissed.

B. Rembrandt Never Threatened CoxCom on the ‘903 Patent

CoxCom does not allege, and it cannot be argued, that Rembrandt ever explicitly threatened CoxCom or any of its affiliates with litigation on the ‘903 patent prior to the filing of this action. There had been no communications between the parties regarding the ‘903 patent prior to this lawsuit, and CoxCom does not allege that any other actions by Rembrandt could be

³ Unpublished decisions cited to are attached hereto as Exhibit A.

construed as an express threat. Thus, where there is no express charge of infringement, as in this case, the Court must consider the totality of the circumstances to determine whether reasonable apprehension of an imminent suit existed. *Arrowhead*, 846 F.2d at 736.

C. The Totality of the Circumstances Shows No Reasonable Apprehension of an Imminent Suit

In the absence of an express threat of litigation, CoxCom cites three alleged factors in support of its contention that it feared an imminent infringement suit by Rembrandt on the '903 patent when it filed this case: (1) Rembrandt's business is to initiate lawsuits to enforce its patent rights; (2) Rembrandt previously sued CoxCom on other patents; and (3) Rembrandt previously sued CoxCom's competitors, but not CoxCom, on the '903 patent.

Under the totality of the circumstances, even if true, these factors fall far short of objectively giving rise to a reasonable apprehension of an imminent lawsuit on the '903 patent against CoxCom. Indeed, the evidence pointed in the opposite direction. Therefore, this action should be dismissed.

1. Rembrandt's Business.

In its complaint, CoxCom alleges that "Rembrandt's business is to initiate lawsuits to enforce patent rights." (*See, e.g.*, D.I. 1 at ¶¶ 7-14). In fact, Rembrandt is very selective regarding which patents it enforces and against which defendants it brings suit. In any event, even if relevant, CoxCom's characterization of Rembrandt's business is legally insufficient to support its position that it had a reasonable apprehension of imminent suit based on the '903. As noted earlier, declaratory judgment jurisdiction cannot be based on the mere fact that Rembrandt owns the '903, and that part of its business is to enforce certain of its patents against selected defendants.

Federal courts faced with CoxCom's type of argument have consistently held that the mere fact that a company vigorously protects its intellectual property is legally insufficient to create a reasonable apprehension of imminent litigation. *See, e.g., Teva Pharmaceuticals USA, Inc. v. Pfizer, Inc.*, 395 F.3d 1324, 1333 (Fed. Cir. 2005).⁴ This policy is sound because to allow a company which lawfully enforces its patent rights to be subject to unfettered declaratory judgment jurisdiction by parties it has not threatened on the patent at issue, would do violence to the purpose and spirit of the Declaratory Judgment Act.

The mere fact that Rembrandt has previously asserted its patent rights against infringers is insufficient as a matter of law to justify a reasonable apprehension of imminent suit by CoxCom. In light of the totality of the circumstances of this case, this Court should give this factor little, if any, weight.

2. Rembrandt's Prior Suit Against CoxCom.

Next, CoxCom contends that Rembrandt's June 1, 2006 lawsuit in Texas supports its allegation that it feared an imminent threat of suit on the '903 patent.⁵ In fact, that lawsuit should have led CoxCom to the opposite conclusion. The June 1, 2006 case against CoxCom, filed nearly 6 months before this case, was directed to four completely different patents. As the

⁴ *West Interactive Corp. v. First Data Resources, Inc.*, 972 F.2d 1295, 1298 (Fed. Cir. 1992); *Angiodynamics, Inc. v. Diomed Holdings, Inc.*, 2006 WL 2583107 at *3 (D. Del. Sept. 7, 2006); *Fairplay Electric Cars, LLC v. Textron Innovations, Inc.*, 431 F. Supp. 2d 491, 493 (D. Del. 2006); *Sirius Satellite Research, Inc. v. Acacia Research Corp.*, 2006 WL 238999 at *6 (S.D.N.Y. Jan. 30, 2006) ("the fact that a patentee has aggressively asserted its patent rights against other alleged infringers is not sufficient to create a reasonable apprehension of imminent litigation.").

⁵ Although Rembrandt filed a second action against CoxCom in Texas, on four patents other than the '903, this second action was filed after CoxCom's declaratory judgment action and, therefore, as a matter of law is legally irrelevant. *West Interactive Corp. v. First Data Resources, Inc.*, 972 F.2d 1295, 1297 (Fed. Cir. 1992) ("This court applies this objective test to the facts at the time the complaint is filed.").

District Court for the Eastern District of Pennsylvania recently has stated, “a prior history of litigation [between the parties] is not necessarily relevant to the determination at all.” *Peregrine Surgical, Ltd. v. Synergistics, USA, Inc.*, 2006 WL 3857492 at *4 (E.D. Pa. Dec. 29, 2006). In dismissing plaintiff’s declaratory judgment action, the court in *Peregrine* stated that the “fact that a company has engaged in prior litigation over other patents does not produce a reasonable apprehension of suit in the instant case.” *Id.* (citing *Glaxo Group, Ltd. v. Dr. Reddy’s Labs., Ltd.*, 325 F. Supp. 2d 502, 507 (D.N.J. 2004) (“the fact that Glaxo has previously exhibited litigious tendencies with respect to other patents does not produce a reasonable apprehension of litigation in this case.”)). Similarly, in *Moore U.S.A. Inc. v. The Standard Register Co.*, the district court held that even as many as three previous lawsuits between the parties in the last five years on related subject matter was insufficient, without more, to find a reasonable apprehension of an imminent suit. 2001 WL 34076423 (N.D.N.Y. Aug. 28, 2001).⁶

In this case, the mere fact that Rembrandt had filed one previous lawsuit against CoxCom on four other patents does not even come close to the type of conduct that satisfies the legal requirements for declaratory judgment jurisdiction. Declaratory judgment jurisdiction usually is found where a patentee holds the threat of litigation over an accused infringer’s head for tactical or business purposes. *See Arrowhead*, 846 F.2d at 736. Here, even after filing its initial lawsuit, Rembrandt never threatened CoxCom with any additional patents, it did not contact any of

⁶ *See also, Black & Decker Inc. v. Robert Bosch Tool Corp.*, 371 F. Supp. 2d 965 (N.D. Ill. 2005); *Progressive Technology in Lighting Inc. v. Lumatech Corp.*, 45 U.S.P.Q. 2d 1928, 1933 (W.D. Mich. 1998) (prior litigation between parties even with other facts present not enough for declaratory judgment jurisdiction); *Ryko Mnfct. Co. v. Delta Services and Equipment Corp.*, 28 U.S.P.Q. 2d 1558 (E.D. La. 1993) (same).

CoxCom's customers or suppliers about any potential infringement,⁷ nor did it issue any press releases or make any public statements to indicate that it intended to sue CoxCom on the '903, or any other patent.⁸

The Federal Circuit, as well as many district courts, have held that the mere fact that there is a litigation history between two parties, particularly where it only comprises one prior case, does not give rise to declaratory judgment jurisdiction on any other patents owned by the plaintiff. A contrary policy would open the floodgates to unjustified litigation and allow all defendants to use the Declaratory Judgment Act as a weapon against patentees in clear contradiction to the purposes of the Act. *See Teva Pharmaceuticals USA, Inc. v. Pfizer, Inc.*, 395 F.3d 1324, 1333 (Fed. Cir. 2005).

3. Rembrandt's Suits Against Others on the '903 Patent.

Finally, CoxCom alleges that Rembrandt's previous lawsuits against Time Warner and Cablevision on the '903 patent have put it under a "real and immediate apprehension of suit on the '903 patent." (D.I. 1 at ¶19). CoxCom reasons that because Rembrandt accused Time Warner and Cablevision's high speed Internet services of infringing the '903 patent, CoxCom would be accused as well since it also provides high speed Internet services. However, both Rembrandt and CoxCom's conduct shows convincingly that CoxCom had no objective basis for believing that it was threatened with a lawsuit on the '903.

First, Rembrandt's own actions illustrate that CoxCom had no objectively reasonable fear of an imminent lawsuit based on the suits against others. The very fact that other cable companies, and not CoxCom, were sued on the '903, logically should have caused CoxCom to

⁷ See, e.g., *Microchip Technology, Inc. v. Chamberlain Group, Inc.*, 441 F.3d 936, 941 (Fed. Cir. 2006); *Vanguard Research, Inc. v. PEAT, Inc.*, 304 F.3d 1249, 1255 (Fed. Cir. 2002).

⁸ See, e.g., *Comcast Cable Comm. Corp. v. Finisar Corp.*, 2006 WL 3259000, *3 (N.D.Cal. Nov. 9, 2006).

assume that it was not going to be sued on the '903, particularly when no suit was filed against it on that patent in the six week period before it filed this action. Moreover, Rembrandt filed its case against Time Warner on the '903 patent on September 13, 2006. In that September action against Time Warner, Rembrandt, in addition to the '903 patent, asserted four patents against Time Warner that had never been asserted against CoxCom. If Rembrandt's action against Time Warner, in fact, caused CoxCom to fear imminent suit, then CoxCom would have filed a declaratory action against Rembrandt on all five patents that were asserted against Time Warner. CoxCom does not explain why the alleged imminent fear related solely to the '903. The obvious explanation is that CoxCom did not file suit on the five patents because Rembrandt's action against Time Warner did not put CoxCom in any fear of imminent suit on any of the five patents asserted by Rembrandt against Time Warner, including the '903 patent.

As a matter of law, the mere fact that Rembrandt sued a competitor of CoxCom on a different group of patents does not provide an objective basis for CoxCom to believe that it would be sued on the '903 patent. *Indium Corp. of Am. v. Semi-Alloys, Inc.*, 781 F.2d 879, 883 (Fed. Cir. 1985) ("The prior patent litigation initiated by [defendant] against two other parties unconnected with [plaintiff], was too remote to make [plaintiff's] apprehension of further litigation in 1982 reasonable, insofar as necessary to give standing to bring a declaratory action on that basis.").⁹ See *Mylan Pharmaceuticals, Inc. v. Merck & Co., Inc.*, 2005 WL 2850137 at *6 (M.D. Pa. Oct. 28, 2005). A patentee's history of enforcing patents does not in and of itself provide any indication regarding the patentee's intentions regarding other patents. See *Mutual Pharm. Co. v. Pfizer Inc.*, 307 F. Supp. 2d 88, 93-94 (D.D.C. 2004). For the same reasons,

⁹ See also, *West Interactive Corp. v. First Data Resources, Inc.*, 972 F.2d 1295, 1298 (Fed. Cir. 1992) (holding defendant's litigation against unrelated third parties did not give plaintiff an objective reason to fear litigation).

Rembrandt's October 13, 2006 lawsuit against Cablevision in Delaware does not objectively support CoxCom's alleged apprehension of imminent suit.

CoxCom's substantial delay in doing anything in response to Rembrandt actions also belies CoxCom's claim now that those actions put CoxCom in fear of an immediate suit on the '903. Rembrandt filed its original suit against CoxCom on July 1, 2006. In the six months before it filed this declaratory judgment action, CoxCom did nothing. Rembrandt sued Time Warner on the '903 patent on September 13, 2006. In response to this, CoxCom again did nothing for over two and a half months. Finally, Rembrandt filed its suit against Cablevision on the '903 patent on October 13, 2006. Once again, for over six weeks CoxCom did nothing. *Holley Performance Products, Inc. v. Barry Grant, Inc.*, 74 U.S.P.Q. 2d 1357 (N.D. Ill. 2004) (Fear of lawsuit dissipated when declaratory judgment plaintiff did nothing during the two week deadline set by patentee for response to infringement allegations.); *Citizen Electronics Co., Ltd. v. Osram GMBH*, 377 F. Supp. 2d 149 (D.D.C. 2005) (case dismissed where plaintiff's delay indicated no apprehension of imminent suit).

In this case, the objective facts demonstrate that CoxCom did not have a reasonable apprehension of suit on the '903 patent. In fact, even when Rembrandt filed its second action against CoxCom without yet knowing about the declaratory judgment action, it did not assert the '903 patent against CoxCom. CoxCom simply cannot meet its burden of proving that the facts here put it in imminent apprehension of a lawsuit and, therefore, its complaint must be dismissed.

II. EVEN IF THE COURT HAS JURISDICTION, IT SHOULD NEVERTHELESS DISMISS THIS CASE IN THE EXERCISE OF ITS DISCRETION UNDER THE DECLARATORY JUDGMENT ACT

Even if the Court were to find subject matter jurisdiction here, it can and should dismiss this case in the exercise of its discretion under the Declaratory Judgment Act. The Act provides federal courts with a "unique breadth of . . . discretion to decline to enter a declaratory

judgment.” *Wilton v. Seven Falls*, 515 U.S. 277, 287 (1995); *see also, Breitigan v. New Castle County*, 350 F. Supp. 2d 571, 582 (D. Del. 2004) (The Act “confers a discretion on the courts rather than an absolute right upon the litigant.”).

In deciding whether to exercise its discretion, courts should consider whether hearing a declaratory judgment action would further the objectives of the Act. “Simply because there is an actual controversy between the parties does not mean that the district court is required to exercise that jurisdiction.” *EMC Corp. v. Norand Corp.*, 89 F.3d 807, 813 (Fed. Cir. 1996). An action evidently filed “as a tactical measure,” rather than to resolve a true cloud of litigation, is an appropriate candidate for discretionary dismissal. *Id.* at 815. The Federal Circuit has described the purpose of the Declaratory Judgment Act to prevent a scenario where

a patent owner engages in a *danse macabre*, brandishing a Damoclean threat with a sheathed sword Guerilla-like, the patent owner attempts extra-judicial patent enforcement with scare-the-customer-and-run tactics that infect the competitive environment of the business community with uncertainty and insecurity.

Arrowhead, 846 F.2d at 734-35.

In this case, no evidence exists that Rembrandt has engaged in any extra-judicial patent enforcement or such a *danse macabre*. In fact, Rembrandt has never contacted CoxCom or any of its affiliates or customers regarding the ‘903 patent or attempted to coerce or hinder CoxCom with any “cloud of litigation.” Rather, it is CoxCom’s own actions that have multiplied the number of cases between the parties.

Moreover, the broader patent dispute between these two parties, including the ‘903 patent, is already being addressed in the Eastern District of Texas. Now that Rembrandt has added the ‘903 patent to its second action against CoxCom in Texas, there is no conceivable purpose for this lawsuit to continue. CoxCom will have a full and fair opportunity to present its

case against the '903 patent in conjunction with its already pending case including Rembrandt's other patents in Texas. Since discovery has not begun in any of these cases, there can be no prejudice to either party.

Given the facts of this case, it is evident that CoxCom's action does nothing to further the purposes of the Declaratory Judgment Act. Entertaining this case would simply be a waste of the judicial resources of this District and provides no benefit to either party. This is surely not the type of conduct the Act was created to guard against. On this independent basis, this action should be dismissed.

CONCLUSION

Because declaratory judgment jurisdiction is lacking for the reasons set forth above, CoxCom's improperly filed Complaint should be dismissed.

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Dated: January 26, 2007

CERTIFICATE OF SERVICE

I hereby certify that on January 26, 2007, I electronically filed the foregoing document with the Clerk of the Court using CM/ECF and caused the same to be served on the plaintiff at the following address in the manner indicated below:

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EXHIBIT

7



US005550863A

United States Patent [19]

Yurt et al.

[11] **Patent Number:** 5,550,863[45] **Date of Patent:** * Aug. 27, 1996[54] **AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM**[75] **Inventors:** Paul Yurt, Scottsdale, Ariz.; H. Lee Browne, Two Soundview Dr., Greenwich, Conn. 06830[73] **Assignee:** H. Lee Browne, Greenwich, Conn.[*] **Notice:** The portion of the term of this patent subsequent to Jul. 21, 2009, has been disclaimed.[21] **Appl. No.:** 133,982[22] **Filed:** Oct. 8, 1993**Related U.S. Application Data**

[63] Continuation of Ser. No. 862,508, Apr. 2, 1992, Pat. No. 5,253,275, which is a continuation of Ser. No. 637,562, Jan. 7, 1991, Pat. No. 5,132,992.

[51] **Int. Cl.⁶** H04B 1/66[52] **U.S. Cl.** 375/240; 375/219; 375/377; 348/7; 348/8; 348/10; 348/384; 455/3.1; 455/4.2[58] **Field of Search** 375/122, 219, 375/259, 277, 240; 455/5.1, 4.1, 4.2, 3.1, 6.3; 358/86, 102; 360/14.1, 19.1; 348/384-387, 6, 7, 8, 10[56] **References Cited****U.S. PATENT DOCUMENTS**

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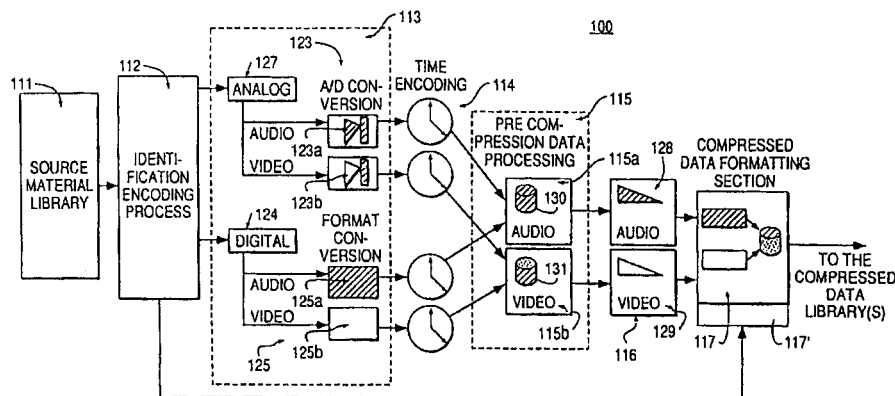
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Primary Examiner—Stephen Chin*Assistant Examiner*—Amanda T. Le*Attorney, Agent, or Firm*—Finnegan, Henderson, Farabow, Garrett & Dunner[57] **ABSTRACT**

A system of distributing video and/or audio information employs digital signal processing to achieve high rates of data compression. The compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in less than real time, for later playback and optional recording on standard audio and/or video tape.

19 Claims, 12 Drawing Sheets

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FIG. 1a

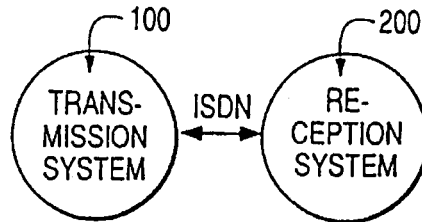


FIG. 1b

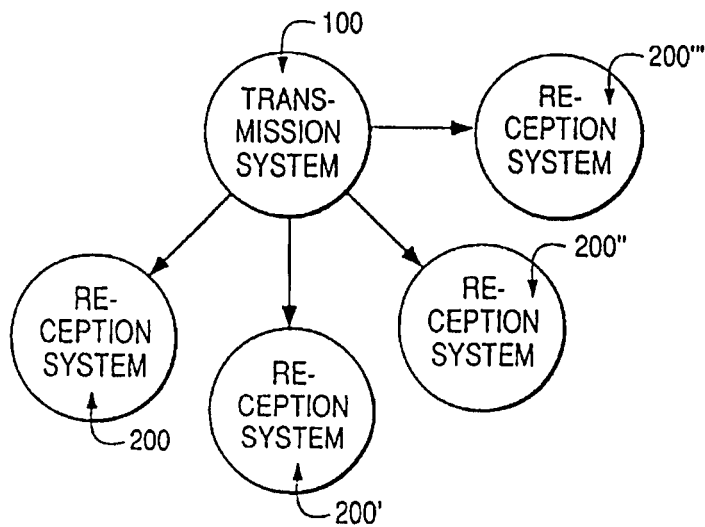
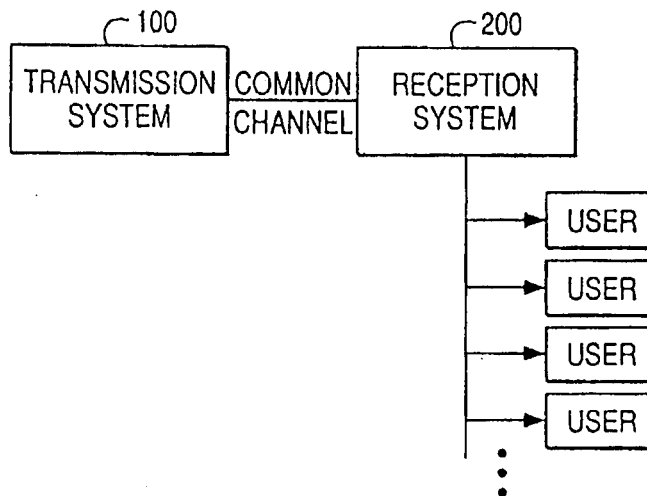
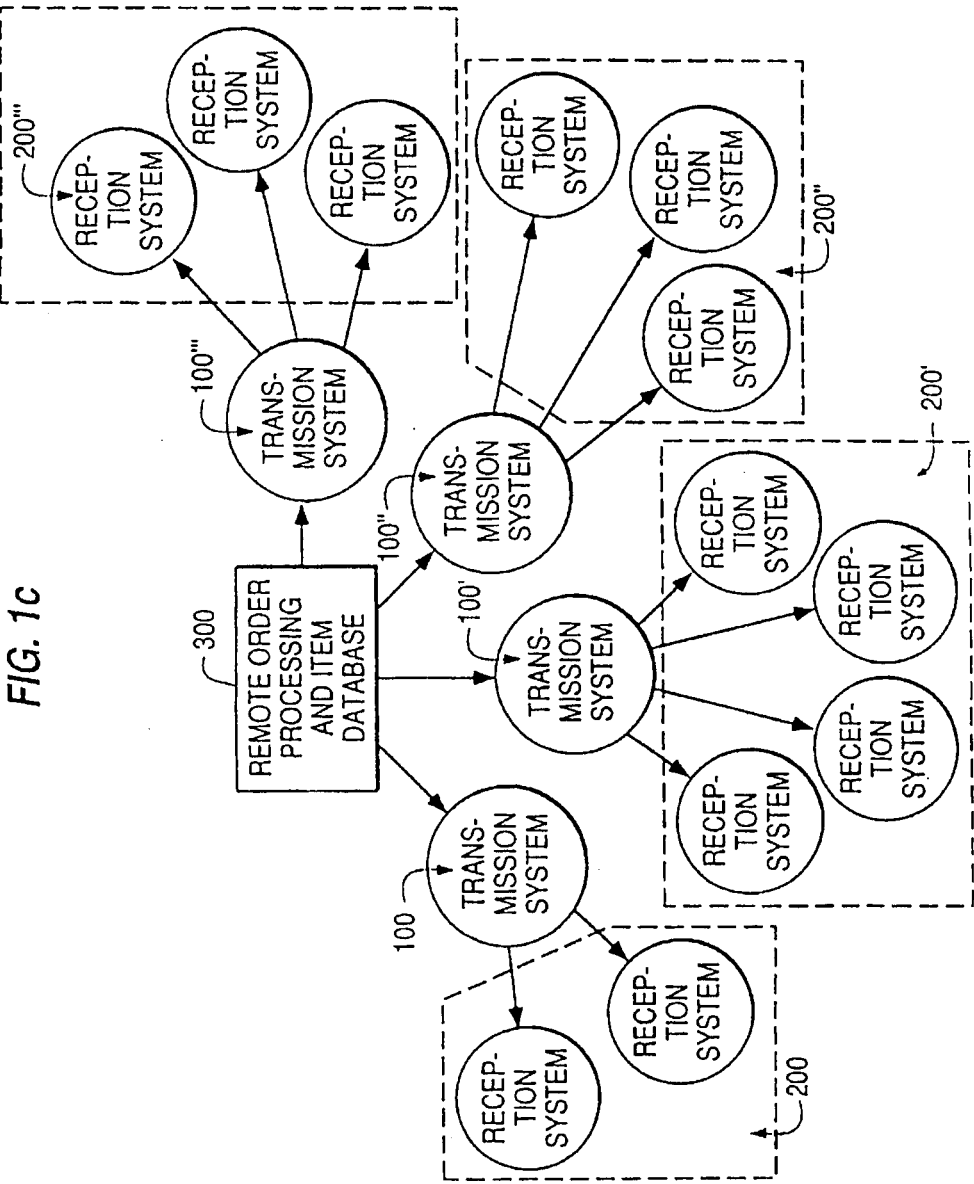


FIG. 1d





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FIG. 1e

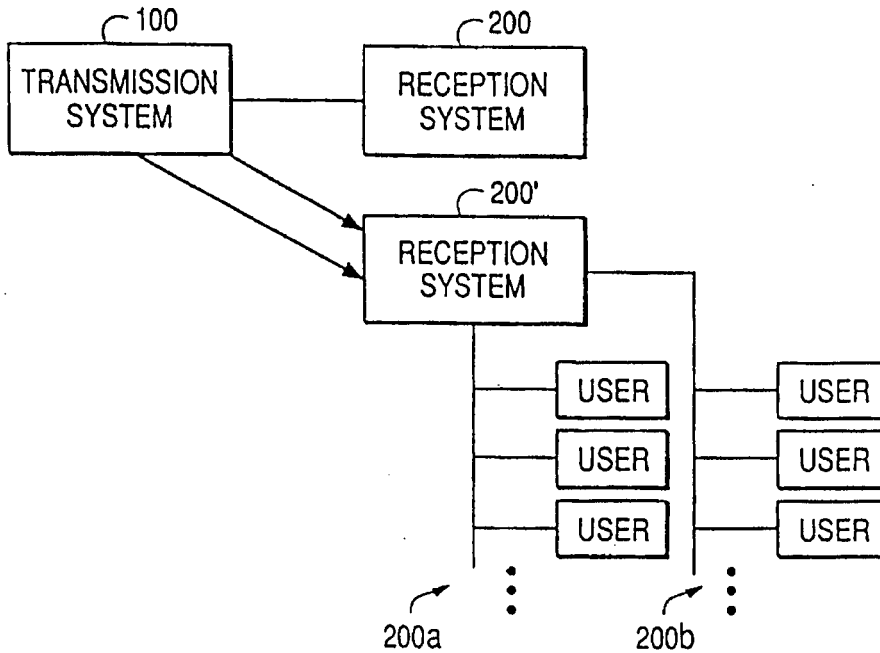
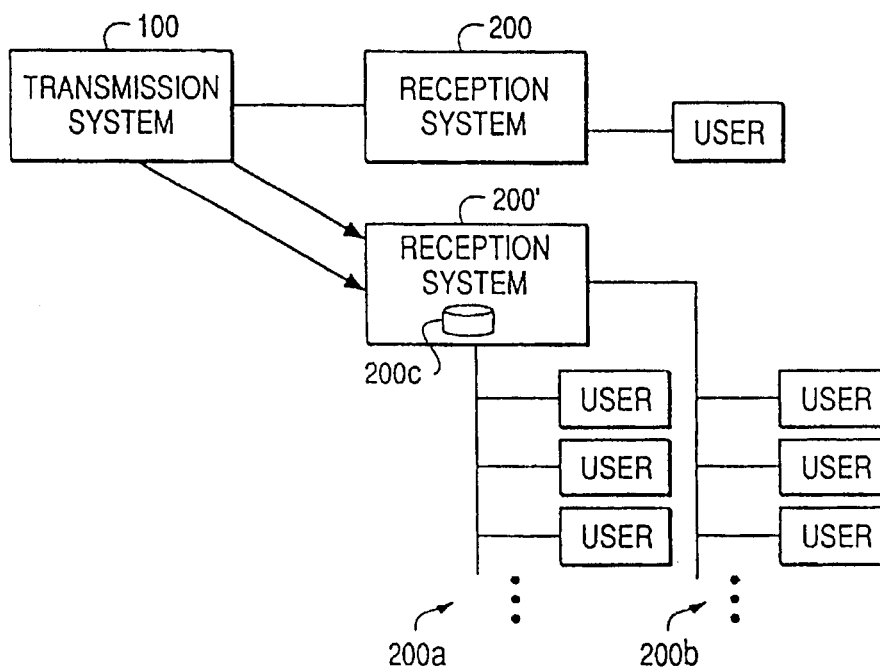


FIG. 1f



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FIG. 1g

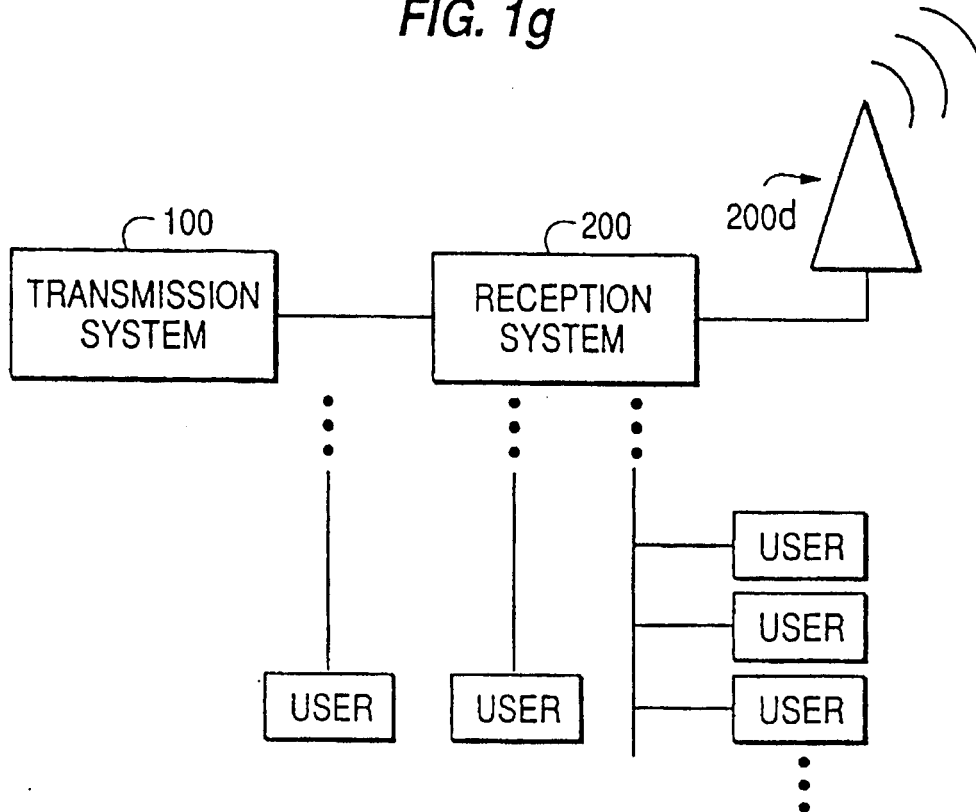
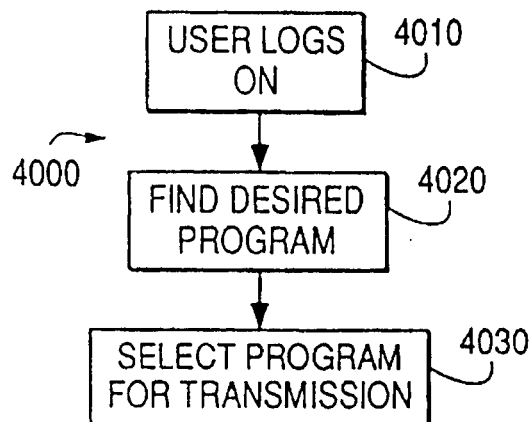


FIG. 4



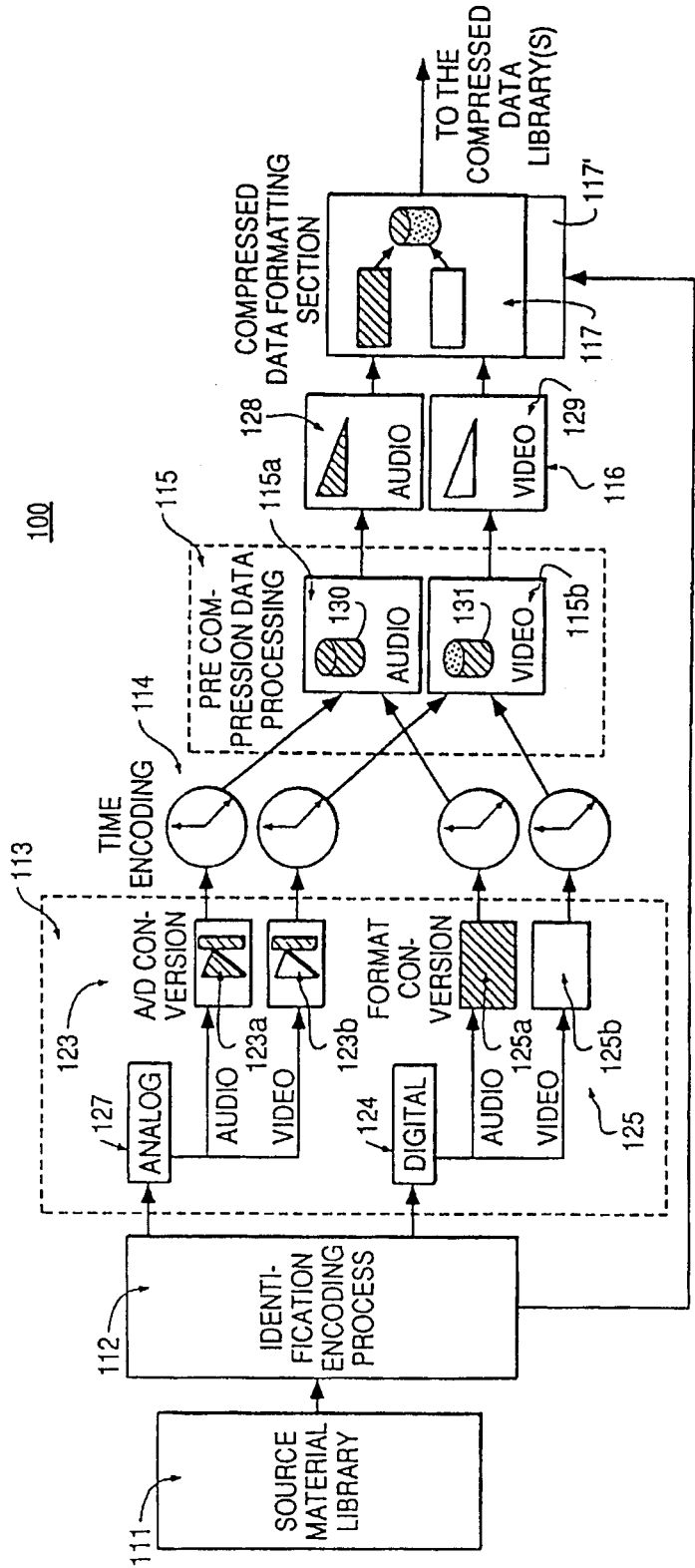


FIG. 2a

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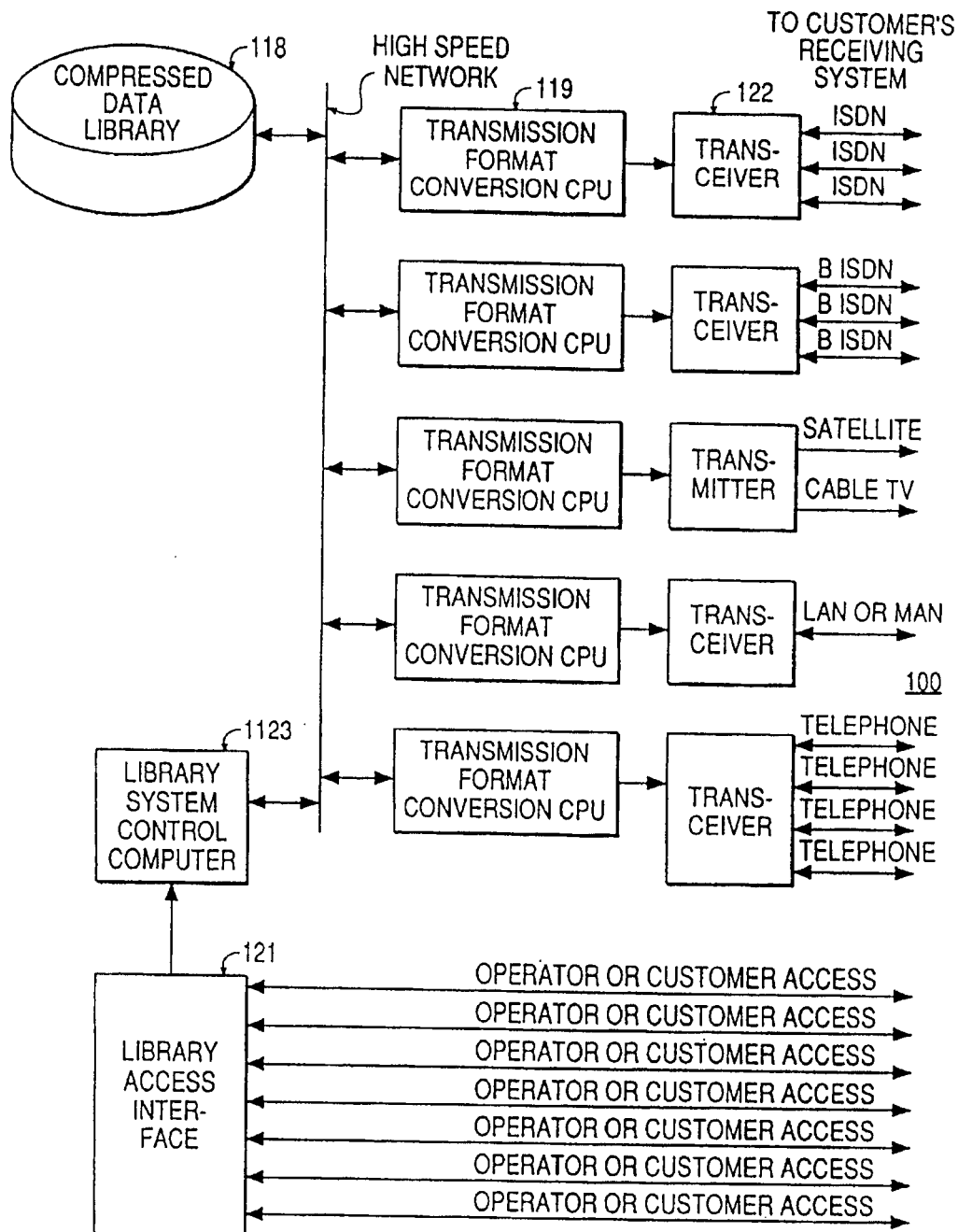


FIG. 2b

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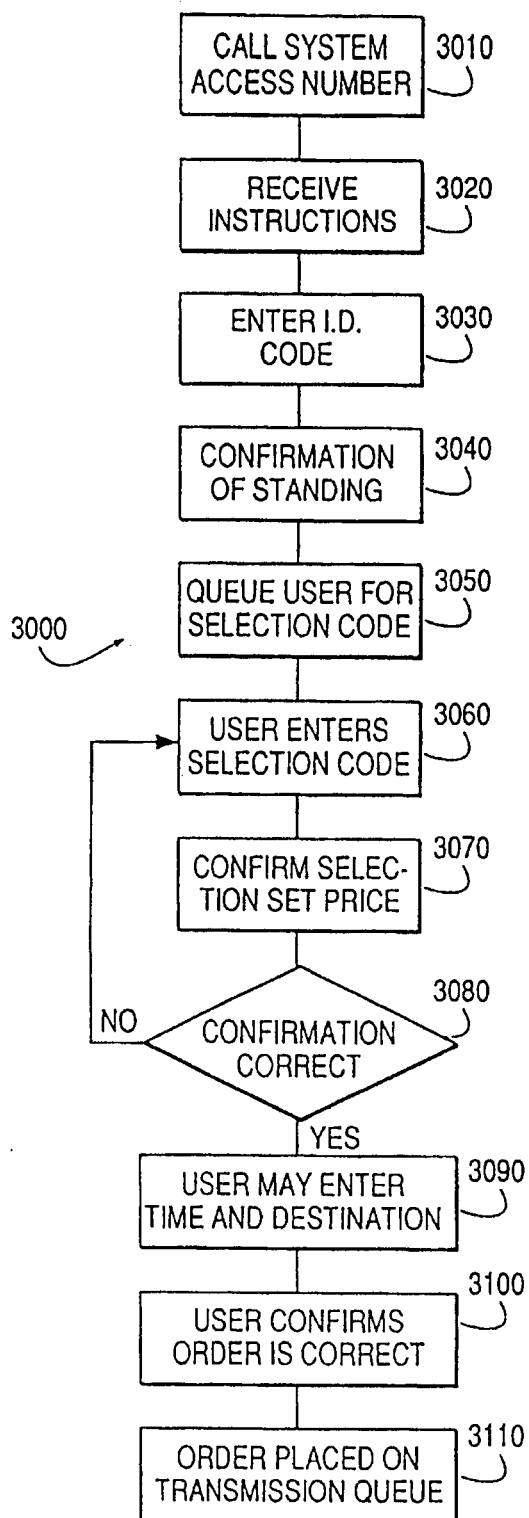


FIG. 3

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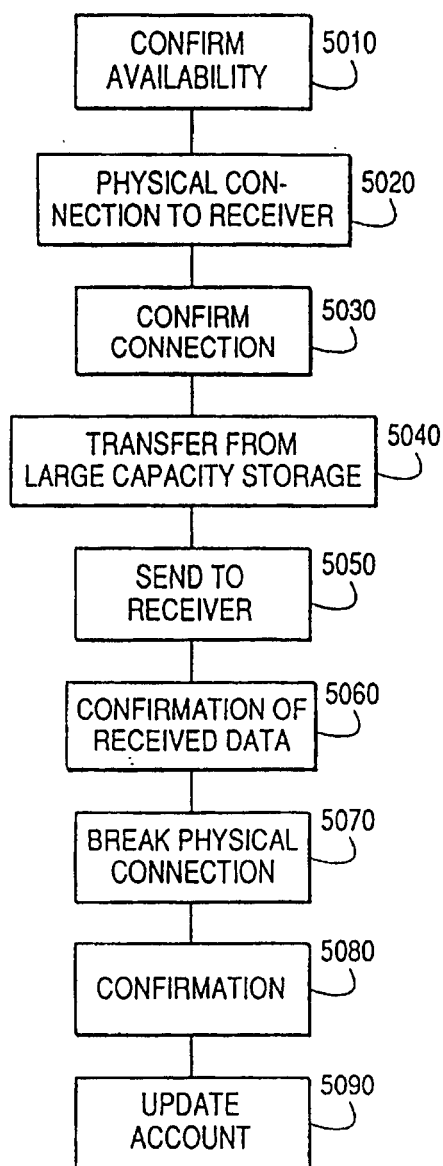


FIG. 5

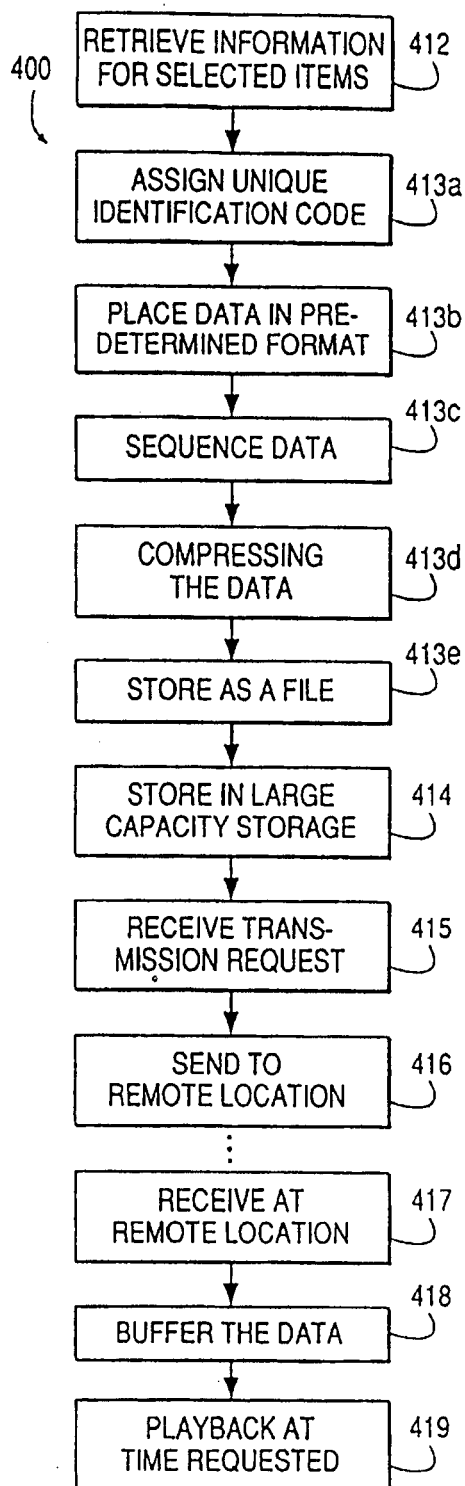


FIG. 7

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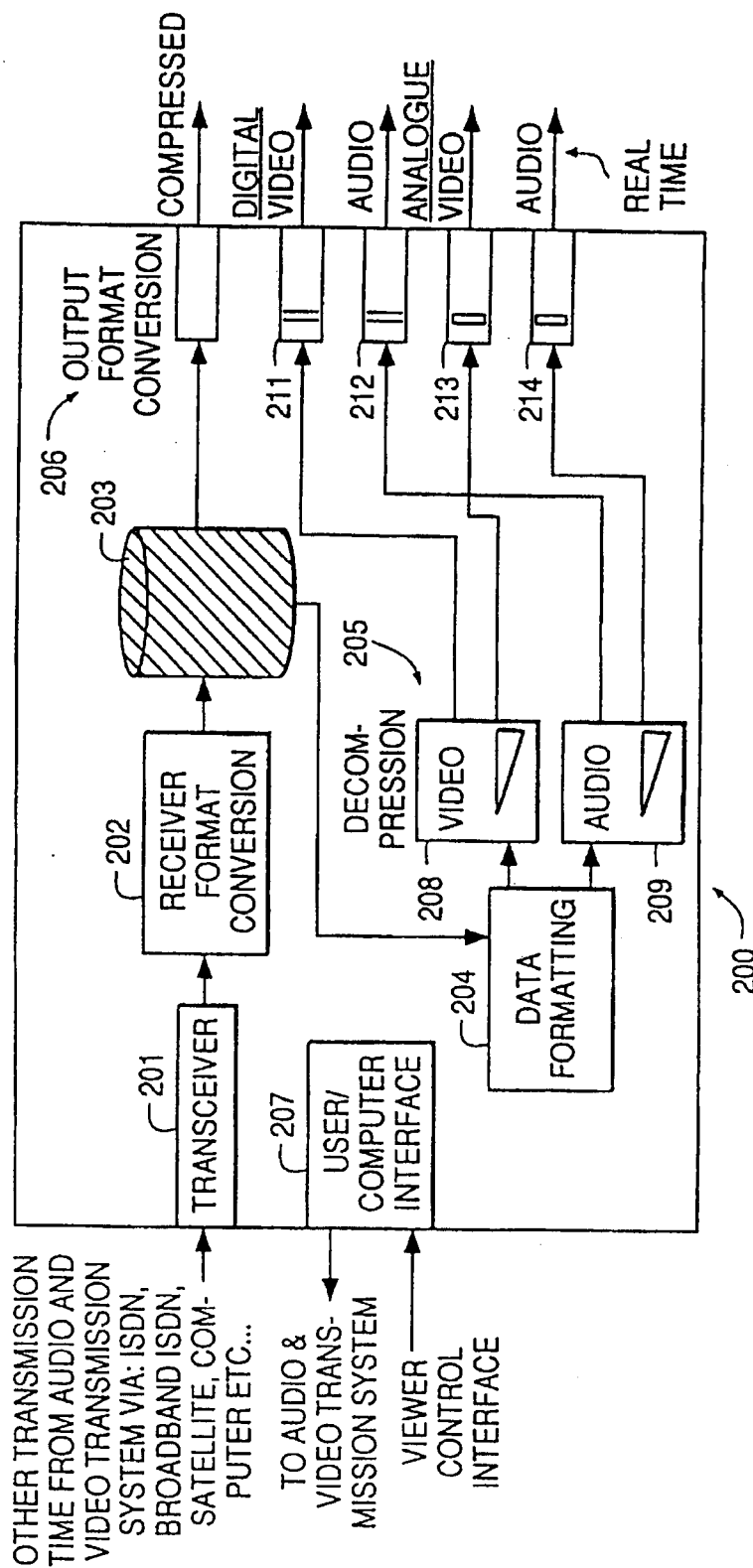


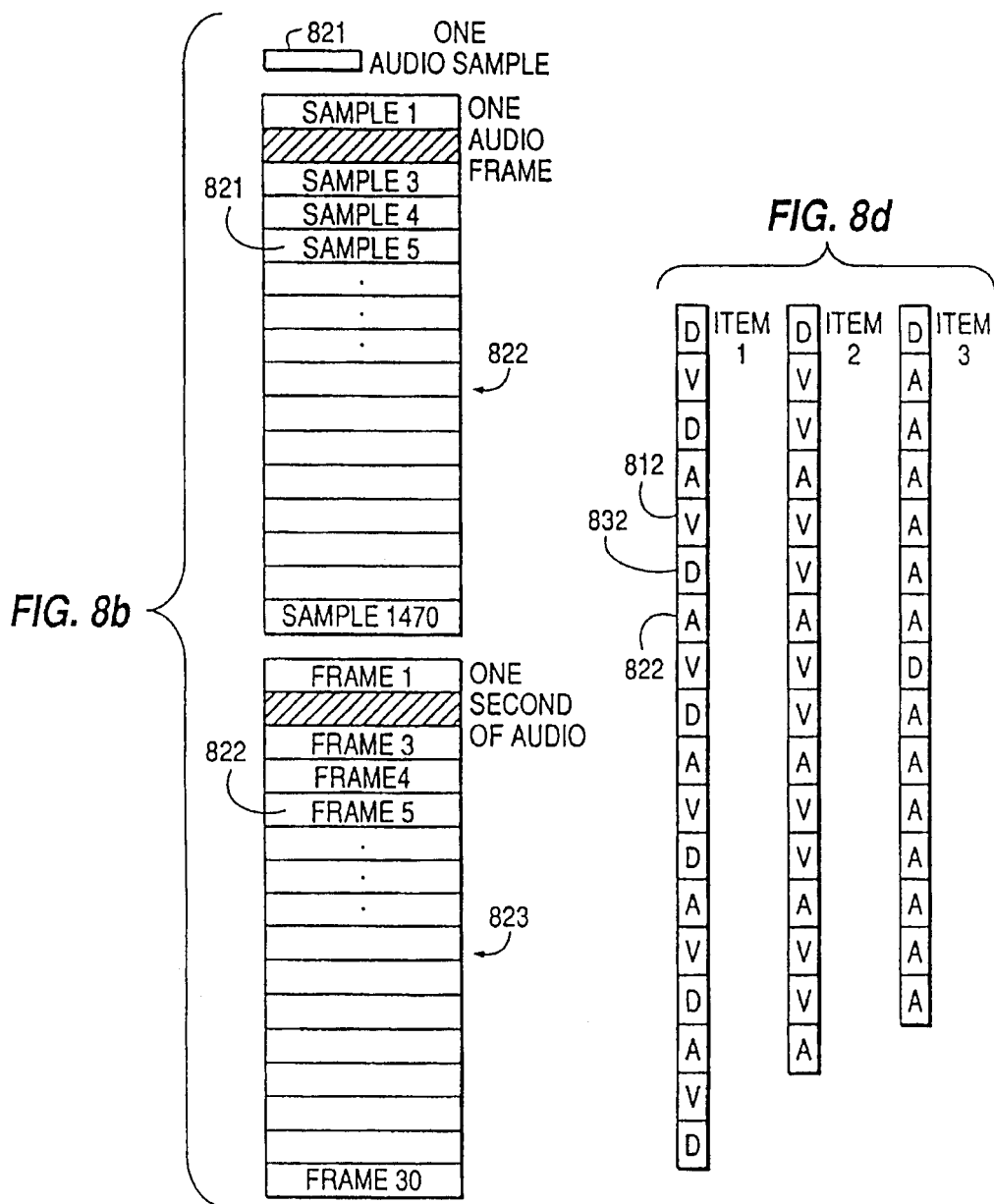
FIG. 6

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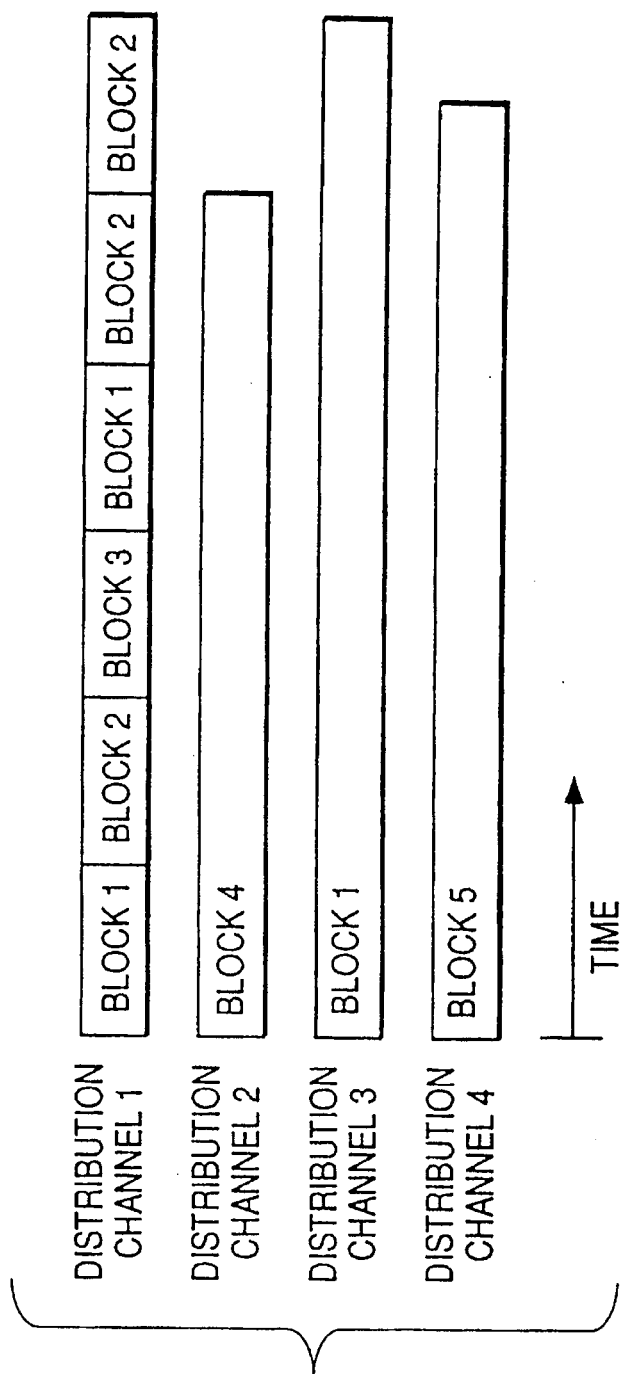


FIG. 8e

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AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM

This is a continuation of prior application Ser. No. 07/862,508 filed Apr. 2, 1992 which issues as U.S. Pat. No. 5,253,275 on Oct. 12, 1993, which is a continuation of prior application Ser. No. 07/637,562 filed Jan. 7, 1991 which issued as U.S. Pat. No. 5,132,992 on Jul. 21, 1992.

BACKGROUND OF THE INVENTION

The present invention relates generally to an audio and video transmission and receiving system, and more specifically to such a system in which the user controls the access and the playback operations of selected material.

At the present time, only a video cassette recorder (VCR) or a laser disk player (LDP) allow a viewer to enjoy control over selection of particular audio/video material. Using either a VCR or an LDP requires the viewer to obtain a video tape either by rental or by purchase. Remote accessing of the material has not yet been integrated into an efficient system.

Several designs have been developed which provide the viewer with more convenient means of accessing material. One such design is disclosed in U.S. Pat. No. 4,506,387, issued to Walter. The Walter patent discloses a fully dedicated, multi-conductor, optical cable system that is wired to the viewer's premises. While the system affords the viewer some control over accessing the material, it requires that a location designated by the viewer be wired with a dedicated cable. The Walter system further requires the viewer be at that location for both ordering and viewing the audio/video material.

U.S. Pat. No. 4,890,320, issued to Monslow, describes a system which broadcasts viewer selected material to a viewer at a prescribed time. This system is limited in that it requires multiple viewers in multiple locations to view the audio/video material at the time it is broadcast, rather than allowing each viewer to choose his or her own viewing time. The system disclosed in Monslow also does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,590,516, issued to Abraham, discloses a system that uses a dedicated signal path, rather than multiple common carriers, to transmit audio/video programming. The receiver has no storage capability. The system provides for only display functions, which limits viewing to the time at which the material is ordered. Like Monslow, the Abraham system does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,963,995, issued to Lang, discloses an audio/video transceiver with the capability of editing and/or copying from one video tape to another using only a single tape deck. Lang does not disclose a system with one or more libraries wherein a plurality of system subscribers may access information stored in the film and tape library or libraries, and play back the selected information at a time and place selected by the subscriber.

It is therefore an object of the present invention to provide a user with the capability of accessing audio/video material by integrating both accessing and playback controls into a system that can use multiple existing communications channels.

It is a further object of the present invention to provide a picture and sound transmission system which allows the user to remotely select audio/video material from any location that has either telephone service or a computer.

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A still further object of the present invention is to provide a picture and sound transmission system wherein the selected audio/video material is sent over any one of several existing communication channels in a fraction of real time to any location chosen by the user that has a specified receiver.

Another object of the present invention is to provide a picture and sound transmission system wherein the user may play back the selected audio/video material at any time selected by the user and retain a copy of the audio/video material for multiple playbacks in the future.

Another object of the present invention is to provide a picture and sound transmission system wherein the information requested by the user may be sent as only audio information, only video information, or as a combination of audio and video information.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

SUMMARY OF THE INVENTION

To achieve the objects in accordance with the purposes of the present invention, as embodied and described herein, the transmission and receiving system for providing information to remote locations comprises source material library means prior to identification and compression; identification encoding means for retrieving the information for the items from the source material library means and for assigning a unique identification code to the retrieved information; conversion means, coupled to identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks; compression means, coupled to the ordering means, for compressing the formatted and sequenced data; compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data received from the compression means with the unique identification code assigned by the identification encoding means; and transmitter means, coupled to the compressed data storing means, for sending at least a portion of a specific file to a specific one of the remote locations.

The present invention further comprises a distribution method responsive to requests identifying information to be sent from a transmission system to a remote location, the method comprising the steps of storing audio and video information in a compressed data form; requesting transmission, by a user, of at least a part of the stored compressed information to the remote location; sending at least a portion of the stored compressed information to the remote location; receiving the sent information at the remote location; buffering the processed information at the remote location; and playing back the buffered information in real time at a time requested by the user.

Additionally, the present invention comprises a receiving system responsive to a user input identifying a choice of an item stored in a source material library to be played back to the subscriber at a location remote from the source material library, the item containing information to be sent from a transmitter to the receiving system, and wherein the receiving system comprises transceiver means for automatically receiving the requested information from the transmitter as

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compressed formatted data blocks; receiver format conversion means, coupled to the transceiver means, for converting the compressed formatted data blocks into a format suitable for storage and processing resulting in playback in real time; storage means, coupled to the receiver format conversion means, for holding the compressed formatted data; decompressing means, coupled to the receiver format conversion means, for decompressing the compressed formatted information; and output data conversion means, coupled to the decompressing means, for playing back the decompressed information in real time at a time specified by the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate the presently preferred apparatus and method of the invention and, together with the general description given above and the detailed description of the preferred embodiment given below serve to explain the principles of the invention. In the drawings:

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention;

FIGS. 2a and 2b are detailed block diagrams of preferred implementations of the transmission system of the present invention;

FIG. 3 is a flowchart of a preferred method of ordering a selection from a library in accordance with the present invention;

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention;

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention;

FIG. 6 is a block diagram of a preferred implementation of the receiving system of the present invention;

FIG. 7 is a flowchart of a preferred method of distribution of the present invention; and

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention. FIGS. 1a, 1b, 1d, 1e, 1f, and 1g each show transmission system 100, described in more detail below with respect to FIGS. 2a and 2b. A user of the transmission and receiving system of the present invention preferably accesses transmission system 100 by calling a phone number or by typing commands into a computer. The user then chooses audio and/or video material from a list of available items which he or she wants to listen to and/or watch.

As shown in FIG. 1a, the transmission and receiving system may preferably comprise a peer to peer configuration where one transmission system 100 communicates with one reception system 200. As shown in FIG. 1b, the transmission and receiving system of the present invention may alternatively comprise a plurality of reception systems 200, 200', 200'', and 200''', which are each associated with a single transmission system 100.

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FIG. 1c shows a high level block diagram of the transmission and receiving system of the present invention including remote order processing and item database 300, described in more detail with respect to FIG. 3. Remote order processing and item database 300 preferably enables users to access desired items by remote communication. The remote order processing and item database 300 may communicate with a plurality of transmission systems 100, 100', 100'', and 100''', each of which communicates with a respective set of reception systems 200, 200', 200'', and 200'''. Each of the reception systems in sets 200, 200', 200'', and 200''' may preferably communicate with a plurality of users.

FIG. 1d shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of users via a reception system 200 configured as a cable television system.

FIG. 1e shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of reception systems 200 and 200'. In the configuration shown in FIG. 1e, reception system 200 is a direct connection system wherein a user is directly connected to transmission system 100. Reception system 200' preferably includes a first cable television system 200a and a second cable television system 200b. Users of cable television systems 200a and 200b are indirectly connected to transmission system 100.

FIG. 1f shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing via several channels to reception systems 200 and 200'. Reception system 200 is preferably non-buffering. In such a system, users are directly connected to transmission system 100, as in reception system 200 in FIG. 1e.

Reception system 200' shown in FIG. 1f is a cable television system, as shown in reception system 200' of FIG. 1e. In FIG. 1f, the reception system 200' is preferably buffering, which means that users may receive requested material at a delayed time. The material is buffered in intermediate storage device 200c in reception system 200'.

In the configuration of FIG. 1f, decompression of the requested material may preferably occur at the head end of a cable television reception system 200'. Thus, distribution may be provided to users via standard television encoding methods downstream of the head end of the cable distribution system. This method is preferred for users who only have cable television decoders and standard television receivers.

FIG. 1g shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing to a reception system 200, which then preferably transmits requested material over airwave communication channels 200d, to a plurality of users. The transmission and receiving system shown in FIG. 1g may preferably transmit either compressed or uncompressed data, depending on the requirements and existing equipment of the user. The airwave transmission and receiving system shown in FIG. 1g may preferably employ either VHF, UHF or satellite broadcasting systems.

With respect to the transmission and receiving systems set forth in FIGS. 1a-1g, the requested material may be fully compressed and encoded, partly decompressed at some stage in transmission system 100, or fully decompressed prior to transmission. The reception systems 200 may either buffer the requested material for later viewing, or decom-

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press in real time the requested material as it is distributed by transmission system 100. Alternatively, the reception systems 200 of the present invention may perform a combination of buffering and non-buffering by buffering some of the requested material and decompressing the remainder of the requested material for immediate viewing as it is distributed by transmission system 100.

In direct connection configurations, such as reception systems 200 shown in FIGS. 1e and 1f, the user preferably selects the reception system 200 to which the requested material is sent, and optionally selects the time playback of the requested material as desired. Accordingly, the user may remotely access the transmission system 100 from a location different than the location of reception system 200 where the material will be sent and/or played back. Thus, for example, a user may preferably call transmission system 100 from work and have a movie sent to their house to be played back after dinner or at any later time of their choosing.

In non-direct connection reception systems such as shown in reception system 200' of FIG. 1f, intermediate storage device 200c may preferably include, for example, sixteen hours of random access internal audio and video storage. A reception system with such storage is capable of storing several requested items for future playback. The user could then view and/or record a copy of the decompressed requested material in real time, or compressed in non-real time, at a time of their choosing. Accordingly, the user would not have to make a trip to the store to purchase or rent the requested material.

In any of the transmission and receiving systems illustrated in FIGS. 1a-1g, the requested material may be copy protected. To achieve copy protection, the requested material, as an item, is encoded as copy protected during storage encoding in transmission system 100. The user may then play back the item only one time. The user may also optionally review select portions of the item prior to its automatic erasure from the memory of the reception system 200. In this way, requested material may be distributed to "view only" users and also to "view and copy" users who wish to retain copies of the distributed items.

Copy protected programs, when decompressed and played back, would have a copy protection technique applied to the analog and digital output signals. The analog video output is protected from copying through the use of irregular sync signals, which makes the signal viewable on a standard television but not recordable on a audio/video recorder. The receiving systems recognizes copy protected programs and disables the audio/video recorder. Digital output protection is effected through copy protect bit settings in the digital output signal, thus preventing a compatible digital recorder from recording the digital audio and/or video signal stream. A protected item will not be passed to the compressed data port of the digital recorder for off line storage.

FIGS. 2a and 2b illustrate detailed block diagrams of preferred implementations of the transmission system 100 of the present invention. Transmission system 100 may either be located in one facility or may be spread over a plurality of facilities. A preferred embodiment of transmission system 100 may preferably include only some of the elements shown in FIGS. 2a and 2b.

Transmission system 100 of a preferred embodiment of the present invention preferably includes source material library means for temporary storage of items prior to conversion and storage in a compressed data library means. The items of information may include analog and digital audio

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and video information as well as physical objects such as books and records which require conversion to a compatible media type before converting, compressing and storing their audio and video data in the compressed data library means.

As shown in FIG. 2a, the source material library means included in transmission system 100 preferably includes a source material library 111. The source material library 111 may include different types of materials including television programs, movies, audio recordings, still pictures, files, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects. These materials are converted to or recorded on a media format compatible to the digital and analog inputs of the system prior to being compressed and stored in a compressed data library 118. The different media formats preferably include digital or analog audio and video tapes, laser disks, film images, optical disks, magnetic disks, computer tapes, disks and, cartridges.

The source material library 111, according to a preferred embodiment of the present invention, may preferably include a single source material library or a plurality of source material libraries. If there are a plurality of source material libraries, they may be geographically located close together or may be located far apart. The plurality of source material libraries may communicate using methods and channels similar to the methods and channel types which libraries may employ for communication with the receiving system 200 of the user, or the source material libraries may communicate via any available method.

Prior to being made accessible to a user of the transmission and receiving system of the present invention, the item must be stored in at least one compressed data library 118, and given a unique identification code by identification encoder 112. Storage encoding, performed by identification encoder 112, aside from giving the item a unique identification code, optionally involves logging details about the item, called program notes, and assigning the item a popularity code. Storage encoding may be performed just prior to conversion of the item for transmission to reception system 200, at any time after starting the conversion process, or after storing the item in the compressed data library 118.

In a preferred embodiment of the present invention, the method of encoding the information involves assigning a unique identification code and a file address to the item, assigning a popularity code, and inputting the program notes. This process is identical for any of the different media types stored in the source material library 111.

The transmission system 100 of the present invention also preferably includes conversion means 113 for placing the items from source material library 111 into a predetermined format as formatted data. In the preferred embodiment, after identification encoding is performed by identification encoder 112, the retrieved information is placed into a predetermined format as formatted data by the converter 113. The items stored in source material library 111 and encoded by identification encoder 112 may be in either analog or digital form. Converter 113 therefore includes analog input receiver 127 and digital input receiver 124. If items have only one format, only one type of input receiver 124 or 127 is necessary.

When the information from identification encoder 112 is digital, the digital signal is input to the digital input receiver 124 where it is converted to a proper voltage. A formatter 125 sets the correct bit rates and encodes into least significant bit (lsb) first pulse code modulated (pcm) data. Formatter 125 includes digital audio formatter 125a and digital

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video formatter 125b. The digital audio information is input into a digital audio formatter 125a and the digital video information, if any, is input into digital video formatter 125b. Formatter 125 outputs the data in a predetermined format.

When the retrieved information from identification encoder 112 is analog, the information is input to an analog-to-digital converter 123 to convert the analog data of the retrieved information into a series of digital data bytes. Converter 123 preferably forms the digital data bytes into the same format as the output of formatter 125.

Converter 123 preferably includes an analog audio converter 123a and an analog video converter 123b. The analog audio converter 123a preferably converts the retrieved audio signal into pcm data samples at a fixed sampling rate. The analog video converter 123b preferably converts the analog video information, retrieved from identification encoder 123, into pcm data also at fixed sampling rates.

If the retrieved information being converted contains only audio information, then the audio signal is fed to the appropriate digital audio input or analog audio input. When the retrieved information contains both audio and video information, the audio and video signals are passed simultaneously to the audio and video converter inputs. Synchronization between the audio and video data can be maintained in this way.

If, for example, the retrieved information to be converted from the source material library 111 is a motion picture film, the picture frames in the film are passed through a digital telecine device to the digital input receiver 124. Format conversion is then preferably performed by digital video formatter 125b. Accompanying audio information is passed through an optical or magnetic digital playback device. This device is connected to digital audio formatter 125a.

In some cases, such as in inter-library transfers, incoming materials may be in a previously compressed form so that there is no need to perform compression by precompression processor 115 and compressors 128 and 129. In such a case, retrieved items are passed directly from identification encoder 112 to the compressed data formatter 117. The item database records, such as the program notes which may also be input from another system, to the compressed data formatting section 117, where this data, if necessary, is reformatted to make it compatible with the material stored in compressed data library 118. Such material may be received in the form of digital tapes or via existing communication channels and may preferably input directly to a short term storage 117' in the compressed data formatting section 117.

The transmission system 100 of the present invention also preferably includes ordering means for placing the formatted information into a sequence of addressable data blocks. As shown in FIG. 2a, the ordering means in the preferred embodiment includes time encoder 114. After the retrieved information is converted and formatted by the converter 113, the information may be time encoded by the time encoder 114. Time encoder 114 places the blocks of converted formatted information from converter 113 into a group of addressable blocks. The preferred addressing scheme employs time encoding. Time encoding allows realignment of the audio and video information in the compressed data formatting section 117 after separate audio and video compression processing by precompression processor 115 and compressor 116.

The converted formatted information of the requested material is then preferably in the form of a series of digital data bytes which represent frames of video data and samples

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of the audio data. A preferred relationship of the audio and video bytes to each other is shown in FIG. 8. Incoming signals are input and converted in sequence, starting with the first and ending with the last frame of the video data, and starting with the first and ending with the last sample of the audio data. Time encoding by time encoder 114 is achieved by assigning relative time markers to the audio and video data as it passes from the converter 113 through the time encoder 114 to the precompression processor 115. Realignment of audio and video data, system addressing of particular data bytes, and user addressing of particular portions of items are all made possible through time encoding.

Through the use of the address of an item and its frame number it is possible to address any particular block of audio or video data desired. From here, further addressing down to the individual byte is possible. Frames and groups of frames may preferably be further broken down, as necessary to the individual bytes and bits, as required for certain processing within the system.

User and system addressing requirements dictate the level of granularity available to any particular section of the system. Users are able to move through data in various modes, thus moving through frame addresses at various rates. For example, a user may desire to listen to a particular song. They may preferably enter the song number either when requesting the item from the compressed data library 118 and only have that song sent to their receiving system 200 or they may preferably select that particular song from the items buffered in their receiving system 200. Internal to the system, the song is associated with a starting frame number, which was indexed by the system operator via the storage encoding process. The system item database may contain information records for individual frames or groups of frames. These can represent still frames, chapters, songs, book pages, etc. The frames are a subset of, and are contained within, the items stored in the compressed data library 118. Time encoding by time encoder 114 makes items and subsets of items retrievable and addressable throughout the transmission system 100. Time encoding enables subsequent compression of the information to be improved because data reduction processes may be performed in the time dimension. This is described in greater detail below.

The transmission system 100 of the present invention also preferably includes data compression means for compressing the formatted and sequenced data. The sequence of addressable data blocks which was time encoded and output by time encoder 114 is preferably sent to precompression processor 115. The data arriving from time encoder 114 may be at various frame rates and of various formats. Precompression processor 115 preferably includes audio precompressor 115a and video precompressor 115b.

Video precompression processor 115b buffers incoming video data and converts the aspect ratio and frame rate of the data, as required by compression processor 116. The frame buffer 131 of video precompression processor 115b holds all incoming data until the data is compressed by the data compressor 116. The incoming video data is processed for sample rate optimization, aspect ratio fitting and buffered in buffer 130 for compression processing by the video precompression processor 115b.

Video precompression processor 115b processes the incoming video data so that it fits into the aspect ratio of the transmission and receiving system of the present invention. When incoming material with a different aspect ratio than the aspect ratio of the system is selected, a chosen background is preferably placed around the inactive region of the

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video information. In this way, no data is lost to differences in the aspect ratio between incoming material, and the converted and compressed data stored in the transmission system 100. Images resulting from a different aspect ratio may have an inactive region where background information is contained, or may be converted into a best fit arrangement. Output from the video precompression processor 115b is stored in the frame buffer 131, which is dual ported and is directly addressable by video compressor 129.

The incoming audio data is processed for sample rate and word length optimization and is then buffered in buffer 130 for compression processing by the audio precompression processor 115a. Audio precompression processor 115a may preferably transcode incoming audio information, as required, to create the optimum sample rate and word lengths for compression processing. The output of the audio precompression processor 115a is a constant sample rate signal of a fixed word length which is buffered in frame buffer 130. The frame buffer 130 is dual ported and is directly addressable by audio compressor 128. Blocking the audio data into frames at audio precompression processor 115a makes it possible to work with the audio data as addressable packets of information.

Once precompression processing is finished, the frames are compressed by the data compressor 116. Compressor 116 preferably comprises an audio data compressor 128 and a video data compressor 129. The benefits of data compression performed by data compressor 116 are shortened transmission time, faster access time, greater storage capacity, and smaller storage space requirements. Compression processing performed by compressors 128 and 129 requires multiple samples of data to perform optimum compression. Audio and video information is preferably converted into blocks of data organized in groups for compression processing by audio compressor 128 and video compressor 129, respectively. These blocks are organized as frames, and a number of frames are contained respectively in the buffers 130 and 131. By analyzing a series of frames it is possible to optimize the compression process.

Audio data is preferably compressed by audio compressor 128 by application of an adaptive differential pulse code modulation (ADPCM) process to the audio data. This compression process, which may be implemented by the apt-x 100 digital audio compression system, is manufactured by Audio Processing Technology (APT). Audio compression ratios of 8X or greater are achieved with the APT system.

Compression by compressor 116 may be performed on a group of 24 video frames may preferably be passed in sequence to the frame buffer 130 of the video precompression processor 115b where they are analyzed by video compressor 129 which performs data reduction processing on the video data. Video compression is preferably performed by video compressor 129. Video compression is achieved by the use of processors running algorithms designed to provide the greatest amount of data compression possible. Video data compression preferably involves applying two processes: a discrete cosine transform, and motion compensation. This process is described in "A Chip Set Core of Image Compression", by Artieri and Colavin. Multiple frames of video data may preferably be analyzed for patterns in the horizontal (H), vertical (V), diagonal (zigzag) and time (Z) axis. By finding repetition in the video data, redundancy may be removed and the video data may be compressed with a minimal loss of information.

In accordance with a preferred embodiment of the present invention, the transmission system 100 may further com-

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prise compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data with the unique identification code received from the data compression means. After compression processing by compressor 116, the compressed audio and video data is preferably formatted and placed into a single file by the compressed data storage means 117. The file may contain the compressed audio and/or video data, time markers, and the program notes. The file is addressable through the unique identification code assigned to the data by the identification encoder 112.

Further, according to the present invention, the transmission system preferably includes compressed data library means for separately storing composite formatted data blocks for each of the files. The compressed data storage means preferably includes compressed data library 118, as shown in FIG. 2b. After the data is processed into a file by the compressed data storage means 117, it is preferably stored in a compressed data library 118. In a preferred embodiment, compressed data library 118 is a network of mass storage devices connected together via a high speed network. Access to any of the files stored in compressed data library 118 is available from multiple reception systems 200 connected to the transmission and receiving system.

Stored items are preferably accessed in compressed data library 118 through a unique address code. The unique address code is a file address for uniquely identifying the compressed data items stored in the compressed data library section of a library system. This file address, combined with the frame number, and the library system address allow for complete addressability of all items stored in one or more compressed data libraries 118. Compressed data library addresses along with receiving system addresses are used to form a completely unique address for distribution system control.

The unique address code is an address assigned to the item by the system operator during storage encoding, which is preferably done prior to long term storage in the compressed data library 118. In a preferred embodiment, the unique address code is used for requesting and accessing information and items throughout the transmission and receiving system. The unique address code makes access to the requested data possible.

The storage encoding process performed by encoder 112 also allows entry of item notes and production credits. Production credits may include the title, names of the creators of the item such as the producer, director, actors, etc. Other details regarding the item which may be of interest and which may make the items more accessible are kept in an item database.

Item addresses are mapped to item names by identification encoder 112 and may preferably be used as an alternative method of accessing items. The item names are easier to remember, thus making user access more intuitive by using item names. The storage encoding entry process performed in identification encoder 112 operates a program which updates a master item database containing facts regarding items in the compressed data library system. The storage encoding process may be run by the system operator whereby the system operator accesses the master item database to track and describe items stored in one or more compressed data libraries. The names and other facts in the item database may preferably be updated at any time via the storage encoding process. Changes made to the master item database may be periodically sent to the remote order processing and item database. 300.

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As described in more detail later, a user may preferably access an item via its unique identification code, via its title, or the user may use other known facts for accessing an item. The user may access items in the compressed data library 118 directly using the unique address code or the user may obtain access via the remote order processing and item database 300. Indirect access via the remote order processing and item database 300 is possible using, for example, a synthesized voice system, a query type of computer program interface, or customer assistance operators. In addition to providing interactive access to the remote order processing and item database 300, a catalog listing some or all available titles may also preferably be published. With a published catalog, users may obtain the unique address code for an item very easily thereby allowing for retrieval from the compressed data library 118 without any help from an interactive system.

To achieve user access via an interactive system, facts about the items may be kept in files as a part of the items or the facts may be kept separately, for example, by systems which only inform users of the available items and take orders. For example, in systems which have portions split in separate locations, the facts about the items may be separated from the items themselves and stored in separate files. A system of this type can distribute user orders to other portions of the transmission and receiving system for ultimate distribution to the requesting user. Further, to support a plurality of users, multiple versions of the item database may preferably reside either on multiple database servers, in catalogs, or on other computer systems.

The item database master may reside in the system control computer 1123 where may be updated and kept current to the contents of the compressed data library 118. The data stored in the item database master may be accessed by users via application programs, running on the system control computer 1123, and on the reception system 200 of the user. Users may connect to the item database via any available telecommunication channels. Copies of the item database master may be updated and informed of new entries into compressed data library 118 at periodic intervals determined by the system manager.

Other copies of the item database master may also be made available to users from the remote order processing and item database 300 which batch processes and downloads user requests to the control computer 1123 of the compressed data library 118 via standard telecommunications or high speed communication channels. Moreover, multiple remote order processing and item database 300 sites make it possible for more locations to process orders than there are library facilities, and thus make order processing more efficient.

Preferably, access of a requested item via the remote order processing and item database 300 operates as follows. If the user does not know the title of the desired item, he or she may request the item by naming other unique facts related to the item. For example, a user would be able to access an item about Tibetan Medicine by asking for all items which include information about "Tibet" and include information about "Medicine." The remote order processing and item database 300 would then be searched for all records matching this request. If there is more than one item with a match, each of the names of the matching items are preferably indicated to the user. The user then selects the item or items that he or she desires. Upon selection and confirmation, by the user, a request for transmission of a particular item or items is sent to the distribution manager program of the system control computer 1123. The request contains the

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address of the user, the address of the item, and optionally includes specific frame numbers, and a desired viewing time of the item.

The storage encoding process performed by identification encoder 112 also allows entry of a popularity code. The popularity code is preferably assigned on the basis of how often the corresponding item is expected to be requested from the compressed data library 118. This popularity code can be used to determine the most appropriate form of media for storage of the compressed data in a mixed media system. Mixed media systems are preferably employed as more cost effective storage in very large compressed data libraries 118. Once assigned, the popularity code may be dynamically updated, by factoring item usage against system usage. Thus, stored items are dynamically moved to the most appropriate media over their life in the compressed data library 118. If a particular item stored in compressed data library 118 is retrieved frequently by users, storage in compressed data library 118 is preferably on higher speed, more reliable, and probably more expensive media. Such media includes Winchester and magneto-optical disks.

If an item stored in compressed data library 118 is retrieved less frequently, it may be stored in the compressed data library 118 on a digital cassette tape. Examples of such cassette tapes are a Honeywell RSS-600 (Honeywell Inc. Minneapolis Minn.), Summus JukeBoxFilm and tape library (Summus Computer Systems, Houston, Tex. 800-255-9638), or equivalent cassette tapes. All items stored in the compressed data library 118 are on line and are connected to the high speed network. Thus, they may be readily accessed.

Instead of using a remote order processing and item database 300, the compressed data library 118 may include the program notes which were input by the system operator. The program notes may preferably include the title of the item stored in the compressed data library 118, chapter or song titles, running times, credits, the producer of the item, acting and production credits, etc. The program notes of an item stored in the compressed data library 118 may be thus contained within the compressed data file formed in the compressed data formatter 117.

In some cases, where multiple compressed data libraries 118 are organized, the popularity code may dictate distribution of a particular item to multiple distribution systems. In such cases, a copy of the compressed data is sent to another library and the other library can then distribute the compressed data to users concurrently with the original compressed data library 118.

The compressed data library 118 is composed of a network of storage devices connected through a High Performance Parallel Interface (HPPI) Super Controller (available from Maximum Strategy Inc., San Jose, Calif.). Therefore, multiple communication controllers may preferably access the large quantity of data stored in compressed data library 118 at very high speeds for transfer to a reception system 200 of a user upon request. For more details on this configuration see Ohrenstein, "Supercomputers Seek High Throughput and Expandable Storage", Computer Technology Review, pp. 33-39 April 1990.

The use of an HPPI controller allows file placement onto multiple mass storage devices of the compressed data library 118 with a minimum of overhead. Database management software controls the location and tracking of the compressed data library 118 which can be located across multiple clusters of file servers connected together by one or more high speed networks over multiple systems.

The transmission system 100 of the present invention may also preferably include library access/interface means for

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receiving transmission requests to transmit items and for retrieving formatted data blocks stored in the compressed data library 118 corresponding to the requests from users. The compressed audio and/or video data blocks, along with any of the information about the item stored in the compressed data library 118 may be accessed via library access interface 121. The library access interface 121 receives transmission requests either directly from the users or indirectly by remote order processing and item database 300. The transmission format means 119 receives the request and retrieves the composite formatted data block of the requested item stored in compressed data library 118 and converts the compressed formatted data block into a format suitable for transmission. The requested item is then sent to the user via the transmitter 122 or directly via interface 121.

In a preferred embodiment of the present invention, customer access of an item stored in compressed data library 118 via the library access interface 121 may be performed in various ways. The methods of requesting a stored item are analogous to making an airline reservation or transferring funds between bank accounts. Just as there are different methods available for these processes it is desirable to have several ordering methods available to the users of the system of the present invention. For example, telephone tone decoders and voice response hardware may be employed. Additionally, operator assisted service or user terminal interfaces may be used.

Customer access via telephone tone decoders and voice response hardware is completely electronic and may preferably be performed between a system user and a computer order entry system. The user may obtain help in ordering an item from a computer synthesized voice. With such an access method, the user will normally be accessing a dynamic catalog to assist them. Confirmation of selections and pricing information may preferably be given to the user prior to completion of the transaction.

This process of access, performed by remote order processing and item database configuration 300, shown in FIG. 1c, preferably includes the following steps, shown in flowchart: 3000 of FIG. 3. First, the user calls the system access number (step 3010). Upon successfully dialing the system access number, the user receives instructions from the system (step 3020). The instructions may preferably include steps the user must take in order to place an order. Preferably, the instructions may be bypassed by the experienced user who knows how to place an order.

The user then enters a customer ID code by which the system accesses the user's account, and indicates to the system that the user is a subscriber of the system (step 3030). In response to the user entering his ID code in step 3030 the system confirms whether the user is in good standing (step 3040). If the user is in good standing, the system queues the user to input his request (step 3050).

The user request may preferably be made from a catalog sent to each of the subscribers of the system. The user will preferably identify his choice and enter the corresponding identification code of the item (step 3060). The system then preferably confirms the selection that the user has made and informs the user of the price of the selection (step 3070).

The user then indicates whether the confirmation performed in step 3070 is correct (step 3080). If the confirmation performed in step 3070 is correct, the user so indicates and then inputs a desired delivery time and delivery location (step 3090).

If the confirmation performed in step 3070 does not result in the selection desired by the user, the user re-inputs the

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item identification code in step 3060 and the confirmation steps 3070 and 3080 are repeated. Therefore, proper selection of the selected item is insured. Once there is confirmation, the user enters the playback time and destination in step 3090.

The user then preferably confirms that the order is correct (step 3100). The confirmation performed in step 3100 includes confirmation of the entire transaction including the selected item, the selected time of playback, and the location of playback. The transaction is then completed and the request is placed on a transmission queue at the appropriate compressed data library 118 (step 3110).

Access by the users via operator assisted service includes telephone operators who answer calls from the users. The operators can sign up new customers, take orders, and help with any billing problems. The operators will preferably have computer terminals which give them access to account information and available program information. Operators can also assist a user who does not know a title by looking up information stored in files which may contain the program notes, as described above. Once the chosen program is identified, the operator informs the user of the price. After the user confirms the order, the user indicates the desired delivery time and destination. The operator then enters the user request into the system. The request is placed in the transmission queue.

Access by a user terminal interface method provides the user with access from various terminals including personal computers, and specialized interfaces built into the reception system 200 for the user. Such access allows a user to do a search of available programs from a computer screen. This process involves the steps 4000 shown in FIG. 4.

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention. In the preferred method of FIG. 4, the user first logs onto the user terminal interface (step 4010). After the user logs on, the user may preferably select a desired item by searching the database of available titles in the library system control computer 1123 or any remote order processing and item database 300 (step 4020). The search may preferably be performed using the database containing the program notes, described above with respect to FIGS. 2a and 2b. It is possible to process orders and operate a database of available titles at multiple locations remote of the source material library 111. Users and order processing operators may preferably access such remote systems and may place transmission requests from these systems. Orders placed on these systems will be processed and distributed to the appropriate libraries. After the desired item is found, the user selects the item for transmission at a specific time and location (step 4030).

To complete an order, the remote order processing and item database 300 preferably connects to the compressed data library 118 of choice via the library access interface 121 and communicates with the library system control computer 1123. Preferably the user's account ID, identification of the item for transmission and the chosen destination for the item are communicated. Through employment of distributed order processing systems of this type many orders may be processed with minimal library overhead.

All transmission requests from the access methods are placed into a transmission queue managed by the library system control computer 1123. This queue is managed by a program that controls the distribution of the requested items to the reception system 200 of the user. The queue manager program also operates in the system control computer and keeps track of the user ID, the chosen program and price, the

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user channel type, the number of requests for a given program, the latest delivery time, and the compressed data library media type (for example, high speed or low speed). From this information, the queue manager program makes best use of the available distribution channels and media for efficient transmission and storage of the requested items.

The queue manager program also manages the file transmission process for multiple requests for a single file, stored in the compressed data library 118. During a given time period, the queue manager program will optimize access to the compressed data library 118, wherever possible it will place the data on multiple outputs for simultaneous transmission to more than one requesting user.

The conversion performed by transmission data converter 119 encodes the data for the transmission channel. The transmission data converter transfers the desired segments of data from the compressed data library 118 onto the communication channel which is used to deliver the data to the reception system 200.

The transmission system 100 of the present invention preferably further includes transmitter means 122, coupled to the compressed data library 118, for sending at least a portion of a specific file to at least one remote location. The transmission and receiving system of the present invention preferably operates with any available communication channels. Each channel type is accessed through the use of a communications adaptor board or processor connecting the data processed in the transmission format converter 119 to the transmission channel.

A preferred embodiment of the present invention also includes means by which to access users via common access lines. These may include standard telephone, ISDN or B-ISDN, microwave, DBS, cable television systems, MAN, high speed modems, or communication couplers. Metropolitan Area Networks (MANs) which are common carrier or private communication channels are designed to link sites in a region. MANs are described by Morreale and Campbell in "Metropolitan-area networks" (IEEE Spectrum, May 1990 pp. 40-42). The communication lines are used to transmit the compressed data at rates up to, typically, 10 Mb/sec.

In order to serve a multitude of channel types, a preferred embodiment of the present invention includes a multitude of output ports of each type connected to one or more computers on the transmission and receiving system. The management of transmission is then distributed. That is, the computer controlling the transmission queue tells the transmission encoding computer its task and then the task is executed by the transmission encoding computer, independent of the transmission queue computer. The transmission queue computer provides the data for transmission by the file server which also distributes to other transmitters located in the same or other transmission encoding computers.

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention. The queue manager program, in the distribution process, preferably confirms availability of an item from the compressed data library 118 and logically connects the item stored in compressed data library 118 to the communications controller, illustrated in FIG. 2a (step 5010). After availability is confirmed in step 5010, the data awaits transmission by the transmitter 122.

After availability is confirmed in step 5010, the communications controller preferably makes the physical connection to the reception system 200 of the user (step 5020). This is normally done by dialing the receiving device of the user. The reception system 200 preferably answers the incoming call and confirms the connection (step 5030).

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Once connected to the reception system 200, in steps 5020 and 5030, the data stored in compressed data library 118 is preferably transferred in data blocks from the compressed data library 118 to the communications controller (step 5040). The data blocks are buffered by the communications controller. The buffered data is sent down the communications channel to the reception system 200 by transmitter 122 (step 5050).

The transmitter 122 places the formatted data onto the communications channel. This is an electrical conversion section and the output depends upon the chosen communication path. The signal is sent to the reception system 200 in either a two way or a one way communication process. In a standard telephone connection, the transmitter 122 is preferably a modem. When using an ISDN channel, the transmitter 122 is preferably a data coupler.

In a preferred embodiment of the present invention, many forms of communication channels may be employed. Distribution of information is by common carrier communication channels whenever possible. These channels include common telephone service, ISDN and Broadband ISDN, DBS, cable television systems, microwave, and MAN.

In order that reception is performed efficiently, the reception system 200 confirms reception of the initial data block before receiving the remaining data blocks whenever possible (step 5060). After all data blocks have been received and reception is confirmed, the communications controller breaks the physical connection to the reception system 200 (step 5070). Then, confirmation of the transmission is sent to the queue manager (step 5080). Finally, the queue manager updates the list and sends the information to the billing program, which updates the account of the user (step 5090).

When item distribution occurs through a broadcasting method such as a communications satellite, the process is one way, with ongoing reception not being confirmed by the reception system 200. In these situations, some further redundancy is included by transmission formatter 122 with the data blocks for error correction processing to be performed in the reception system 200. In such one way communication situations, the queue manager program running in library system control computer 1123 confirms reception, via telephone line connection for example, to the reception system 200 after distribution. This should occur prior to updating the user's account and the dispatch lists.

The real time output signals are output to a playback system such as an audio amplifier and/or television. This output may also be sent to an audio/video recorder for more permanent storage. Moreover, in the preferred embodiment only non-copy protected data can be recorded on an audio/video recorder. Any material which is copy protected will be scrambled at the video output in a way which makes it viewable on a standard audio/video receiver but does not allow for recording of the material.

The reception system 200 has playback controls similar to the controls available on a standard audio/video recorder. These include: play, fast forward, rewind, stop, pause, and play slow. Since items are preferably stored on random access media, the fast forward and rewinding functions are simulations of the actual events which occur on a standard audio/video recorder. Frames do not tear as on an audio/video recorder, but in fast play modes they go by very quickly.

The library access interface 121 in the reception system 200 preferably includes a title window where a list of available titles are alphabetically listed. This window has two modes: local listing of material contained within the

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library system control computer 1123, and library listing for all available titles which may be received from the available, remotely accessible libraries. The titles listed in this window are sent from the database on the library system control computer 1123 or the remote order processing and item database 300.

The system may also preferably include dispatching control software which receives input from the remote order processing and item database 300 and sends distribution requests to the distribution systems. In instances where not all items are contained in each of the compressed data libraries 118, the dispatching software will keep a list of the available titles in a particular compressed data library 118. The dispatch software may also preferably coordinate network traffic, source material library 111 utilization, source material library 111 contents, and connection costs. By proper factoring of these variables, efficient use of the available distribution channels may be achieved.

FIG. 6 illustrates a block diagram of a preferred implementation of the reception system 200 according to the present invention. The reception system 200 is responsive to user requests for information stored in source material library 111. The reception system 200 includes transceiver 201 which receives the audio and/or video information transmitted by transmitter 122 of the transmission system 100. The transceiver 201 automatically receives the information from the transmitter 122 as compressed formatted data blocks.

The transceiver 201 is preferably connected to receiver format converter 202. The receiver format converter 202 converts the compressed formatted data blocks into a format suitable for playback by the user in real time.

In the reception system 200 of the present invention, the user may want to play back the requested item from the source material library 111 at a time later than when initially requested. If that is the case, the compressed formatted data blocks from receiver format converter 202 are stored in storage 203. Storage 203 allows for temporary storage of the requested item until playback is requested.

When playback is requested, the compressed formatted data blocks are sent to data formatter 204. Data formatter 204 processes the compressed formatted data blocks and distinguishes audio information from video information.

The separated audio and video information are respectively decompressed by audio decompressor 209 and video decompressor 208. The decompressed video data is then sent simultaneously to converter 206 including digital video output converter 211 and analog video output converter 213. The decompressed audio data is sent simultaneously to digital audio output converter 212 and analog audio output converter 214. The outputs from converters 211-214 are produced in real time.

The real time output signals are output to a playback system such as a TV or audio amplifier. They may also be sent to an audio/video recorder of the user. By using the reception system 200 of the present invention, the user may utilize the stop, pause, and multiple viewing functions of the receiving device. Moreover, in a preferred embodiment of the present invention, the output format converters may be connected to a recorder which enables the user to record the requested item for future multiple playbacks.

FIG. 7 is a flow chart 400 of a preferred method of distribution of the present invention. The distribution method is preferably responsive to requests identifying information to be sent from the transmission system 100 to remote locations. Method 400 assumes that the items have already been stored in compressed data library 118.

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As illustrated in FIG. 7, the first step of the distribution method 400 involves retrieving the information for selected items in the source material library 111, upon a request by a user of the distribution system (step 412). This is analogous to taking books off of a shelf at the local public library after the person has decided that he or she would like to read them.

After the information for the selected items is retrieved in step 412, the distribution method 400 of the present invention further comprises the step of processing the information for efficient transfer (step 413). The processing performed in step 413 preferably includes assigning a unique identification code to the retrieved information performed by identification encoder 112, shown and described with respect to FIG. 2a (step 413a). The processing also preferably includes placing the retrieved information into a predetermined format as formatted data by converter 113 (step 413b), and placing the formatted data into a sequence of addressable data blocks by ordering means 114 (step 413c).

Processing step 413 also includes compressing the formatted and sequenced data performed by data compressor 116 (step 413d), and storing as a file the compressed sequenced data received from the data compression means with the unique identification assigned by the identification encoding means (step 413e).

After the information is processed for efficient transfer, in substeps 413a-e of step 413, the distribution method 400 of the present invention preferably includes the step of storing the processed information in a compressed data library (step 414). Preferably, the compressed data library is analogous to compressed data library 118, described with respect to FIG. 2a.

After the information is stored in a compressed data library 118, the transmission and receiving system preferably waits to receive a transmission request (step 415). Upon receiving a transmission request, from transmission system 100, the compressed formatted data is preferably converted for output to a reception system 200, selected by the user. The information is preferably transmitted over an existing communication channel to a reception system 200, and is received by that system (step 417). When the information is received in step 417, it is preferably formatted for the particular type of reception system 200 to which the information is sent.

The received information is preferably buffered (step 418) by a storage means analogous to element 203 shown in FIG. 3. The information is preferably buffered so that it may be stored by the user for possible future viewings. The requested information is then played back to the reception system 200 of the user at the time requested by the user (step 419).

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system. FIG. 8a shows the block structure of video data where a video frame 812 is composed of a plurality of video samples 811, and a second of video 813 is composed of a plurality of video frames 812.

FIG. 8b shows the block structure of audio data where an audio data frame 822 is composed of a plurality of audio samples 821, and a second of audio 823 is composed of a plurality of audio data frames 822. FIG. 8c shows the block structure of a data frame 832 composed of a plurality of data bytes 831. The combination of the audio frames 812, video frames 822, and data frames 832 comprise the elements of a single item. FIG. 8d shows a block representation of for three illustrative items which may be stored in the source

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material library 111. Each of items 1-3 contains its own arrangement of video frames 812, audio frames 822, and data frames 832.

FIG. 8e shows methods of distribution to reception systems 200 with both multiplexed and non-multiplexed signal paths, both addressed and non-addressed blocks of items. A block of an item may be an entire item or, alternatively, may be only a portion of an item, as selected by a user. Further, the blocks may be composed of either compressed, partially compressed, or fully decompressed data, as required by the configuration of the reception system 200.

As shown in FIG. 8e, the same block, for example, block 1, may be simultaneously transmitted over different distribution channels. The blocks when transmitted over one of the distribution channels may have receiver addresses appended to the blocks or the reception system 200 may have been preconfigured to receive the blocks comprising data frames for particular items from the active distribution channel.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with the true scope and spirit of the invention being indicated by the following claims.

What is claimed is:

1. A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:

a plurality of library means for storing items containing information;

identification encoding means for retrieving the information in the items from the plurality of library means and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data;

ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;

compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;

compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and

transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to one of the remote locations.

2. A transmission system as recited in claim 1, wherein the plurality of libraries are geographically separated.

3. A receiving system responsive to a user input identifying a choice of an item stored in a source material library at a transmission system, the item containing information to be sent from the transmission system to the receiving system, the receiving system comprising:

requesting means for transmitting to the source material library in the transmission system the identity of the item;

transceiver means, coupled to the requesting means, for receiving the item from the transmission system as at least one formatted data block;

receiver format conversion means, coupled to the transceiver means, for converting the at least one formatted

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data block into a format suitable for storage processing, and for playback at the receiver system; and

storage means, coupled to the receiver format conversion means, for storing a complete copy of the formatted data, the storage means including an off line recording media allowing for future multiple playbacks of the data.

4. A receiver system as recited in claim 3, further comprising play back means, coupled to the receiver format conversion means, for playing back the copy of the data.

5. A receiver system as recited in claim 4, further comprising:

recognizing means for recognizing protected data; and

disabling means, coupled to the recognizing means and the storage means, for disabling the second storage means when the recognizing means recognizes protected data.

6. A receiving system responsive to a user input identifying a choice of an item stored in a source material library at a transmission system, the item containing information to be sent from the transmission system to the receiving system, the receiving system comprising:

requesting means for transmitting to the source material library in the transmission system the identity of the item;

transceiver means, coupled to the requesting means, for receiving the item from the transmission system as at least one compressed, formatted data block;

receiver format conversion means, coupled to the transceiver means, for converting the at least one compressed, formatted data block into a format suitable for storage processing, and for playback at the receiver system;

first storage means, coupled to the receiver format conversion means, for storing a complete copy of the formatted data;

decompressing means, coupled to the first storage means, for decompressing the copy of the formatted data; and

second storage means, including an off line recording media allowing for future multiple playbacks, for storing a complete copy of the data.

7. A receiver system as recited in claim 6, wherein the second storage means is coupled to the decompressing means, and the second storage means stores the decompressed copy of the data.

8. A receiver system as recited in claim 6, further comprising play back means, coupled to the decompressing means, for playing back the decompressed copy of the data.

9. A receiver system as recited in claim 8, further comprising:

recognizing means for recognizing protected data; and

disabling means, coupled to the recognizing means and the second storage means, for disabling the second storage means when the recognizing means recognizes protected data.

10. A system for providing information to be transmitted to remote locations, comprising:

identification encoding means for assigning a unique identification code to items of information;

conversion means, coupled to the identification encoding means, for placing each item of information into a predetermined format as formatted data;

ordering means, coupled to the conversion means, for placing the formatted data for each item of information into a sequence of addressable data blocks;

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compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;
 compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks; and
 first transmitter means, coupled to the compressed data storing means, for selectively sending at least a portion of one of the files;
 a distribution system, remote from the transmission system, the distribution system comprising:
 means for receiving and storing a complete copy of the portion of one of the files sent by the first transmitter means; and
 second transmitter means, responsive to the stored portion of the one of the files, for transmitting a representation of the stored portion to at least one of a plurality of the remote locations.
 11. A transmission system as recited in claim 10, wherein; the first transmitter means transmits the portion of the one of the files at a non-real time rate; and the second transmitter means transmits the stored portion in substantially real time.
 12. A transmission system as recited in claim 11, wherein the second transmitter means comprises a decompressor for decompressing the complete copy of the stored portion of the one of the files.
 13. A transmission system as in claim 10, further comprising library means for storing and supplying to the identification encoding means items containing information.
 14. A method of distributing audio/video information comprising:
 transmitting compressed, digitized data representing a complete copy of at least one item of audio/video information at a non-real time rate from a central processing location;
 receiving the transmitted compressed, digitized data representing a complete copy of the at least one item of audio/video information, at a local distribution system remote from the central processing location;
 storing the received compressed digitized data representing the complete copy of the at least one item at the local distribution system;
 in response to the stored compressed, digitized data, transmitting a representation of the at least one item at a real-time rate to at least one of a plurality of subscriber receiving stations coupled to the local distribution system; and
 decompressing the compressed, digitized data representing the at least one item of audio/video information after the transmission step wherein the decompressing step is performed in the local distribution system to produce the representation of the at least one item for transmission to the at least one subscriber station;
 wherein the transmitting step comprises:

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inputting an item having information into the transmission system;
 assigning a unique identification code to the item having information;
 formatting the item having information as a sequence of addressable data blocks;
 compressing the formatted and sequenced data blocks;
 storing, as a file, the compressed, formatted, and sequenced data blocks with the assigned unique identification code; and
 sending at least a portion of the file at the non-real time rate to the local distribution system.
 15. A method as recited in claim 14, wherein the inputting step comprises inputting the item having information as blocks of digital data.
 16. A method as recited in claim 14, wherein the inputting step comprises: inputting the item having information as an analog signal; and converting the analog signal to blocks of digital data.
 17. A method of distributing audio/video information comprising:
 formatting items of audio/video information as compressed digitized data at a central processing location;
 transmitting compressed, digitized data representing a complete copy of at least one item of audio/video information from the central processing location;
 receiving the transmitted compressed, digitized data representing a complete copy of the at least one item of audio/video information, at a local distribution system;
 storing the received compressed, digitized data representing the complete copy of the at least one item at a local distribution system; and
 using the stored compressed, digitized data to transmit a representation of the at least one item to at a plurality of subscriber receiving stations coupled to the local distribution system;
 wherein the formatting step comprises:
 inputting an item having information into the transmission system;
 assigning a unique identification code to the item having information;
 formatting the item having information as a sequence of addressable data blocks; and
 compressing the formatted and sequenced data blocks.
 18. A method as recited in claim 17, wherein the inputting step comprises inputting the item having information as blocks of digital data.
 19. A method as recited in claim 17, wherein the inputting step comprises:
 inputting the item having information as an analog signal and converting the analog signal to blocks of digital data.

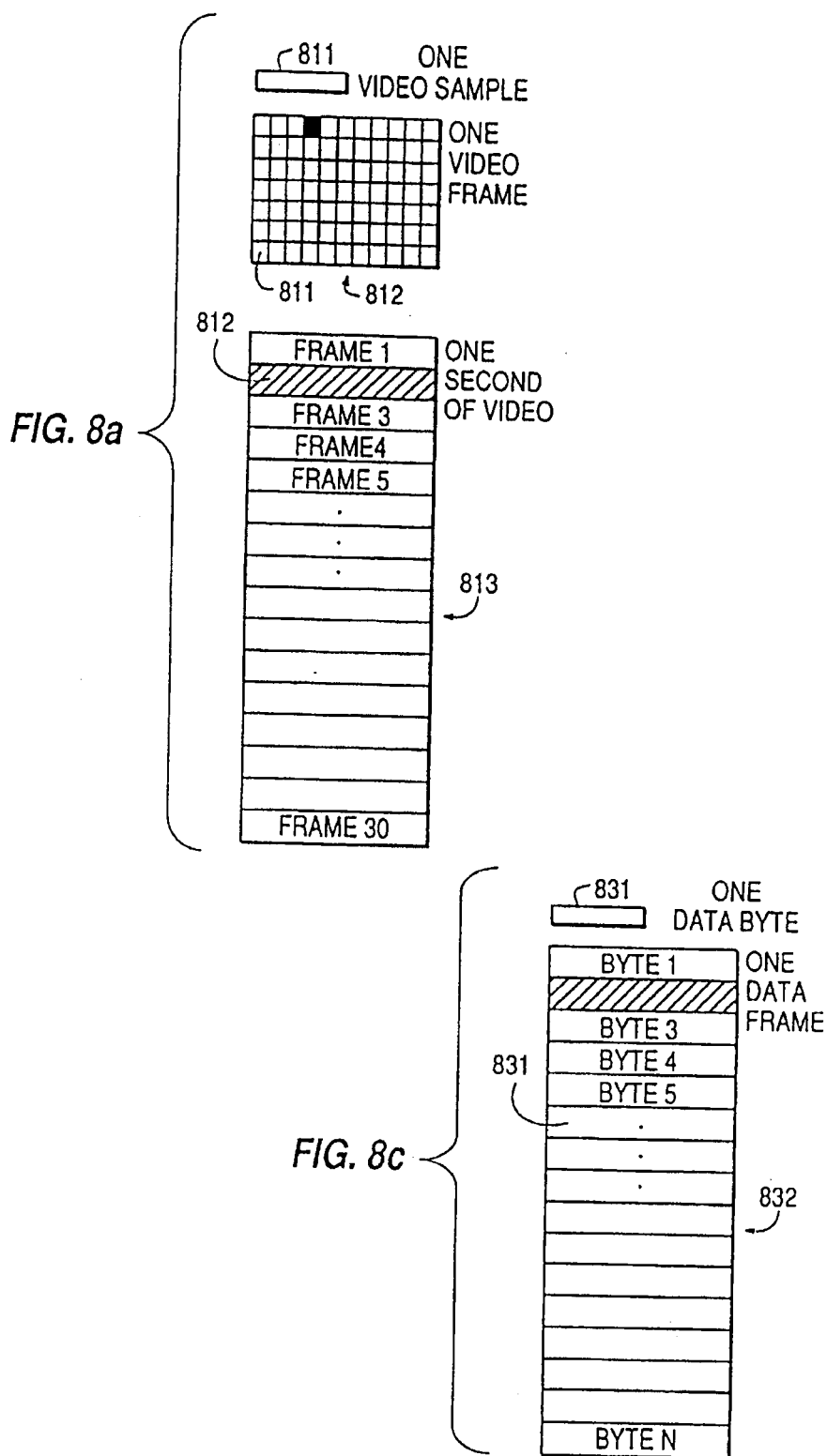
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EXHIBIT

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US005253275A

United States Patent [19]

Yurt et al.

[11] Patent Number: **5,253,275**[45] Date of Patent: * **Oct. 12, 1993**[54] **AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM**[75] Inventors: **Paul Yurt, Scottsdale, Ariz.; H. Lee Browne, Two Soundview Dr., Greenwich, Conn. 06830**[73] Assignee: **H. Lee Browne, D/B/A Greenwich Information Technologies, Greenwich, Conn.**

[*] Notice: The portion of the term of this patent subsequent to Jul. 21, 2009 has been disclaimed.

[21] Appl. No.: **862,508**[22] Filed: **Apr. 2, 1992****Related U.S. Application Data**

[63] Continuation of Ser. No. 637,562, Jan. 7, 1991, Pat. No. 5,132,992.

[51] Int. Cl.⁵ **H04B 1/66**[52] U.S. Cl. **375/122; 358/86; 455/5.1**[58] Field of Search **375/122; 358/335, 133, 358/86, 84, 102, 903; 360/8, 9.1, 14.1; 455/2-5.1**[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Stephen Chin

Attorney, Agent, or Firm—Finnegan, Henderson, Farabow, Garrett & Dunner

[57] **ABSTRACT**

A system of distributing video and/or audio information employs digital signal processing to achieve high rates of data compression. The compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in less than real time, for later playback and optional recording on standard audio and/or video tape.

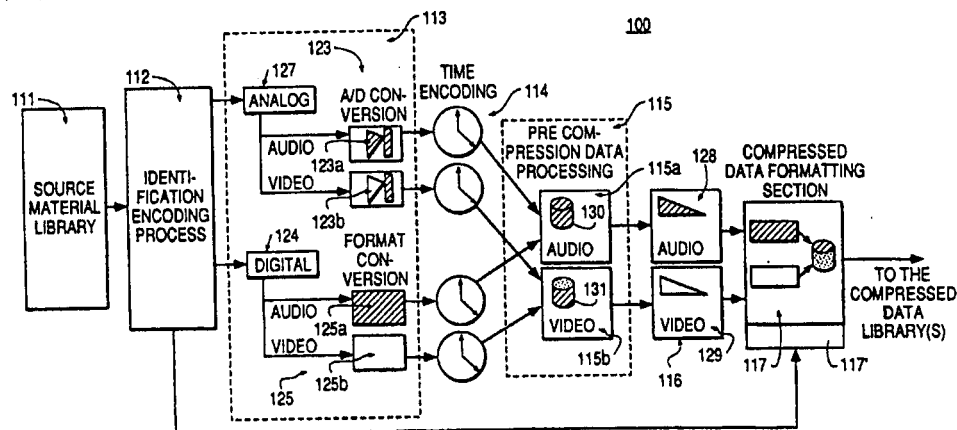
7 Claims, 12 Drawing Sheets

FIG. 1a

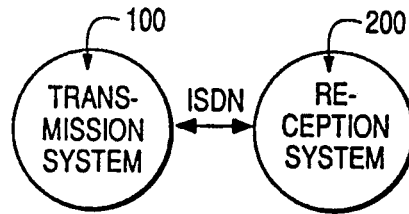


FIG. 1b

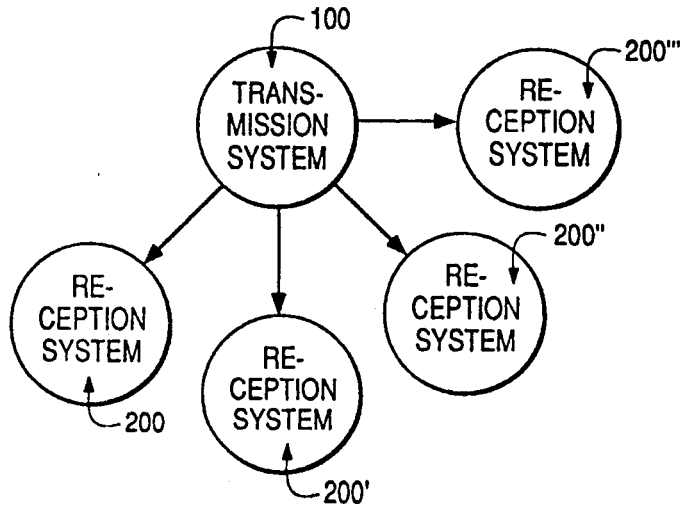
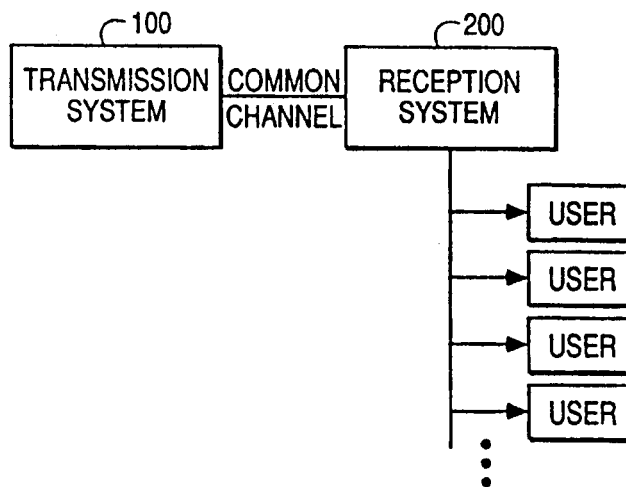
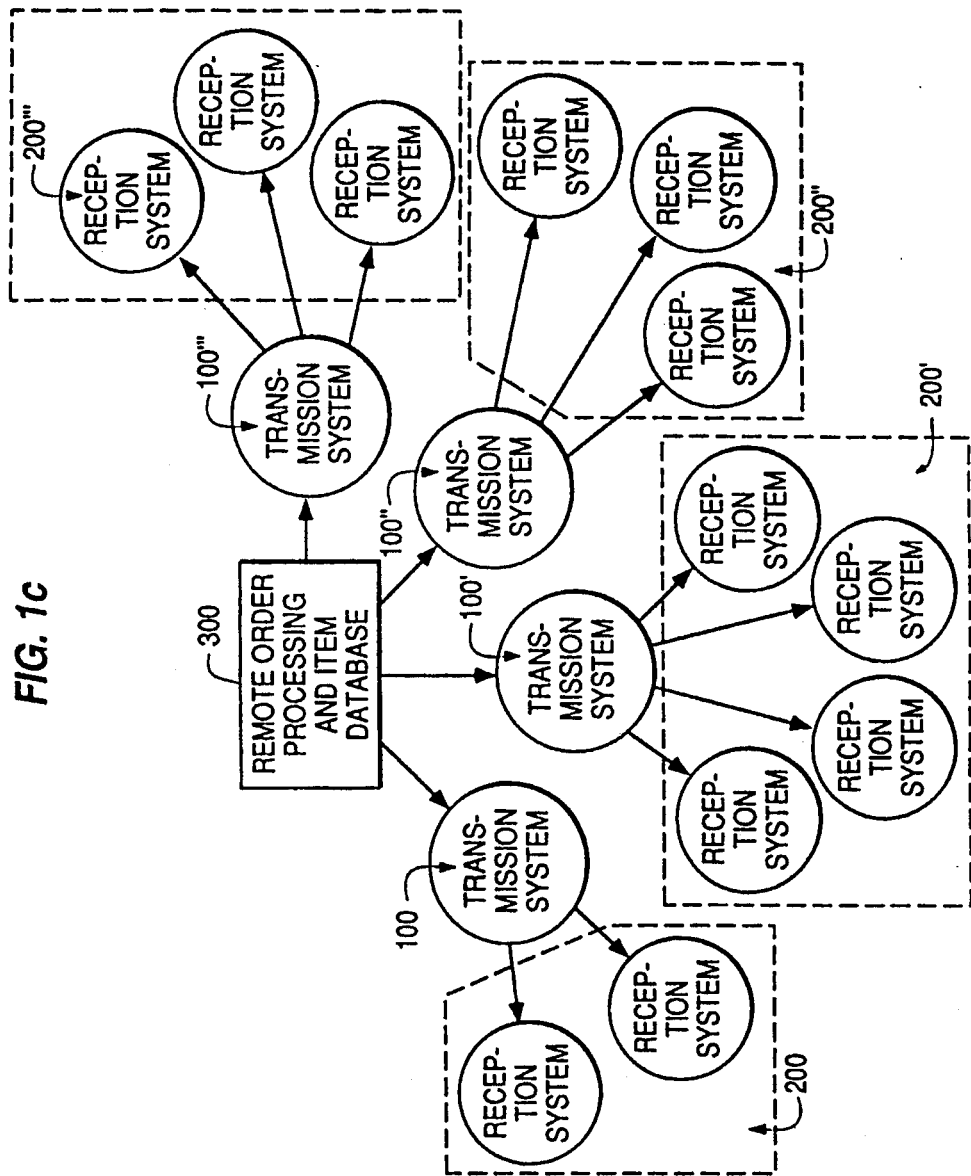


FIG. 1d





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FIG. 1e

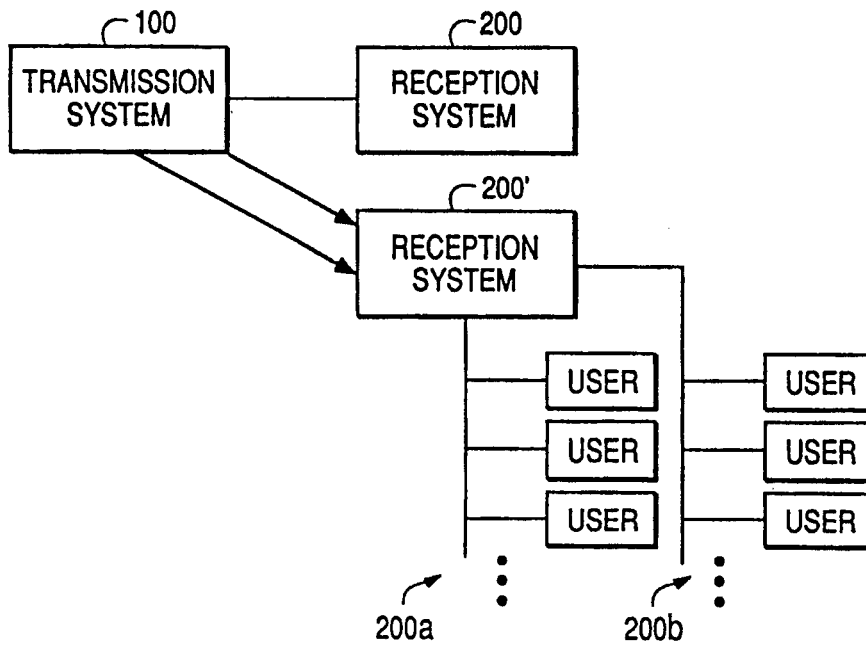


FIG. 1f

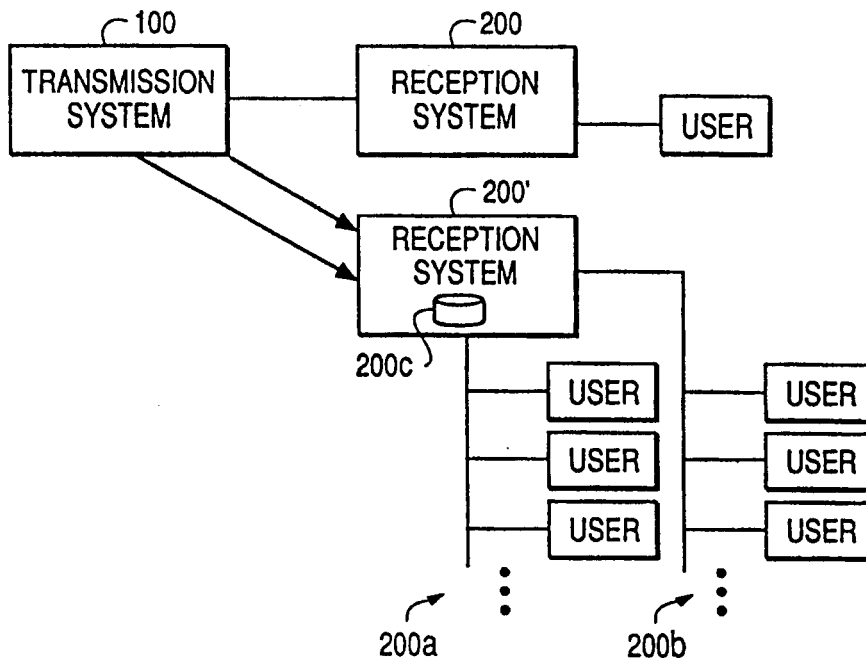


FIG. 1g

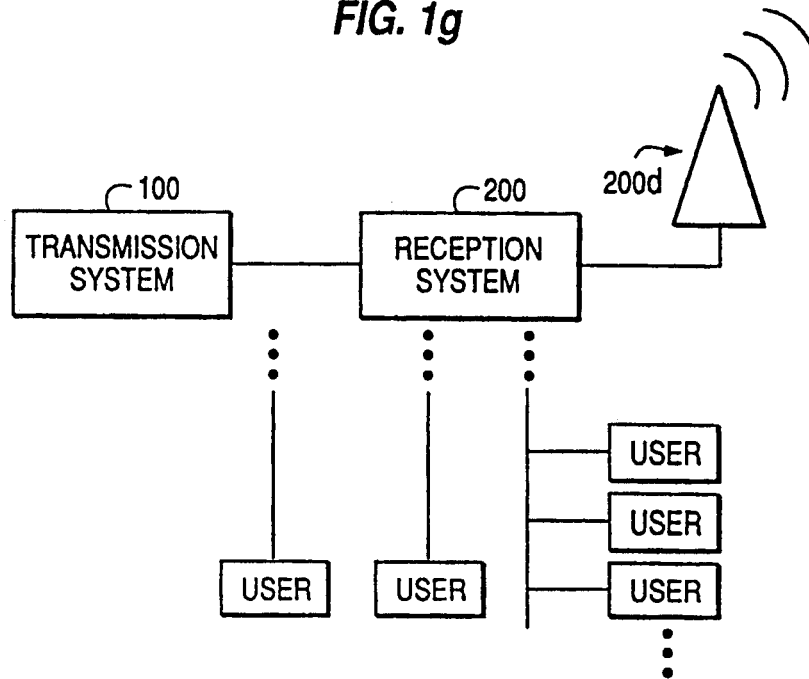
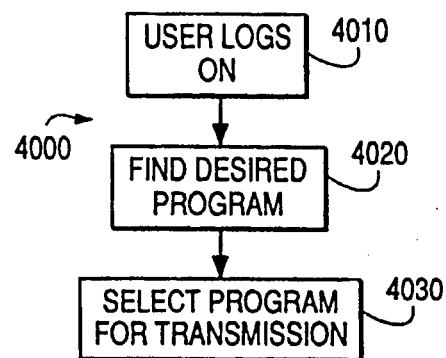


FIG. 4



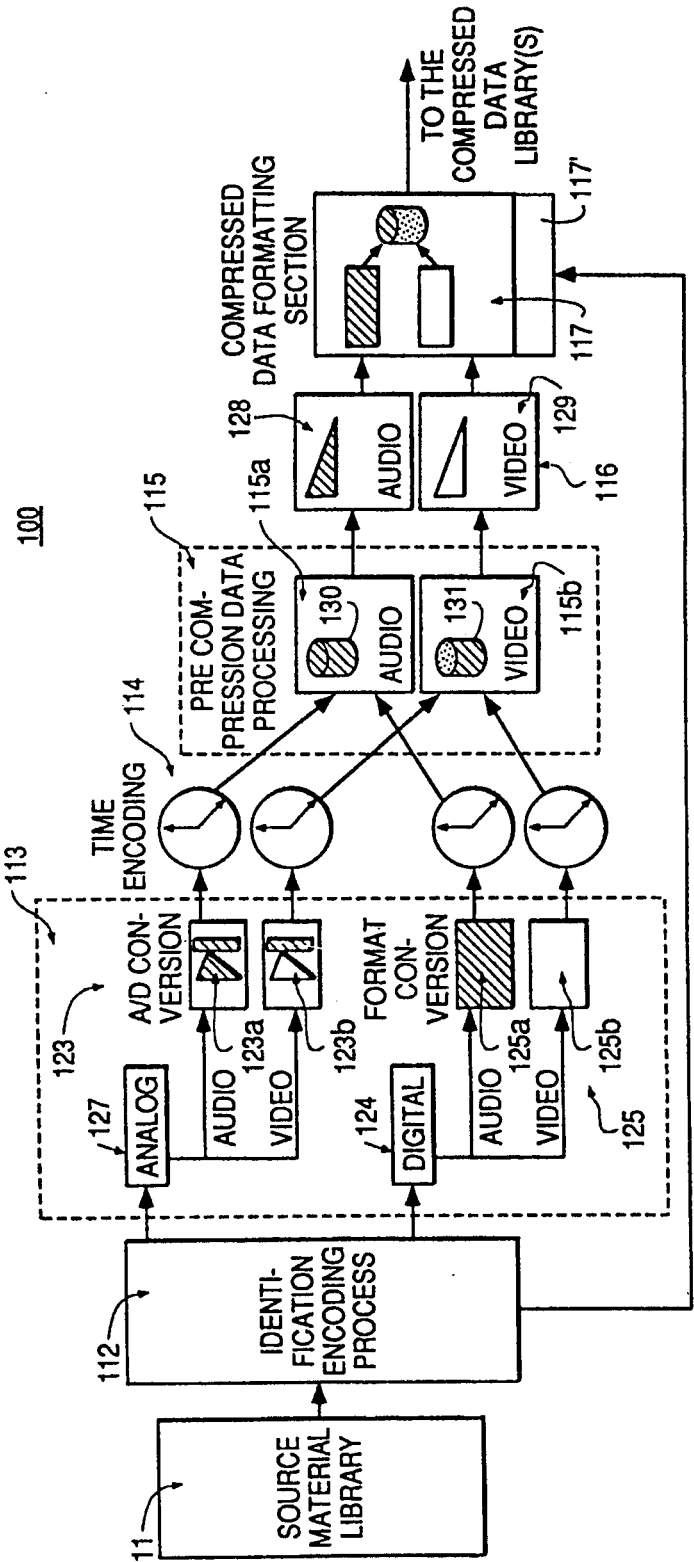


FIG. 2a

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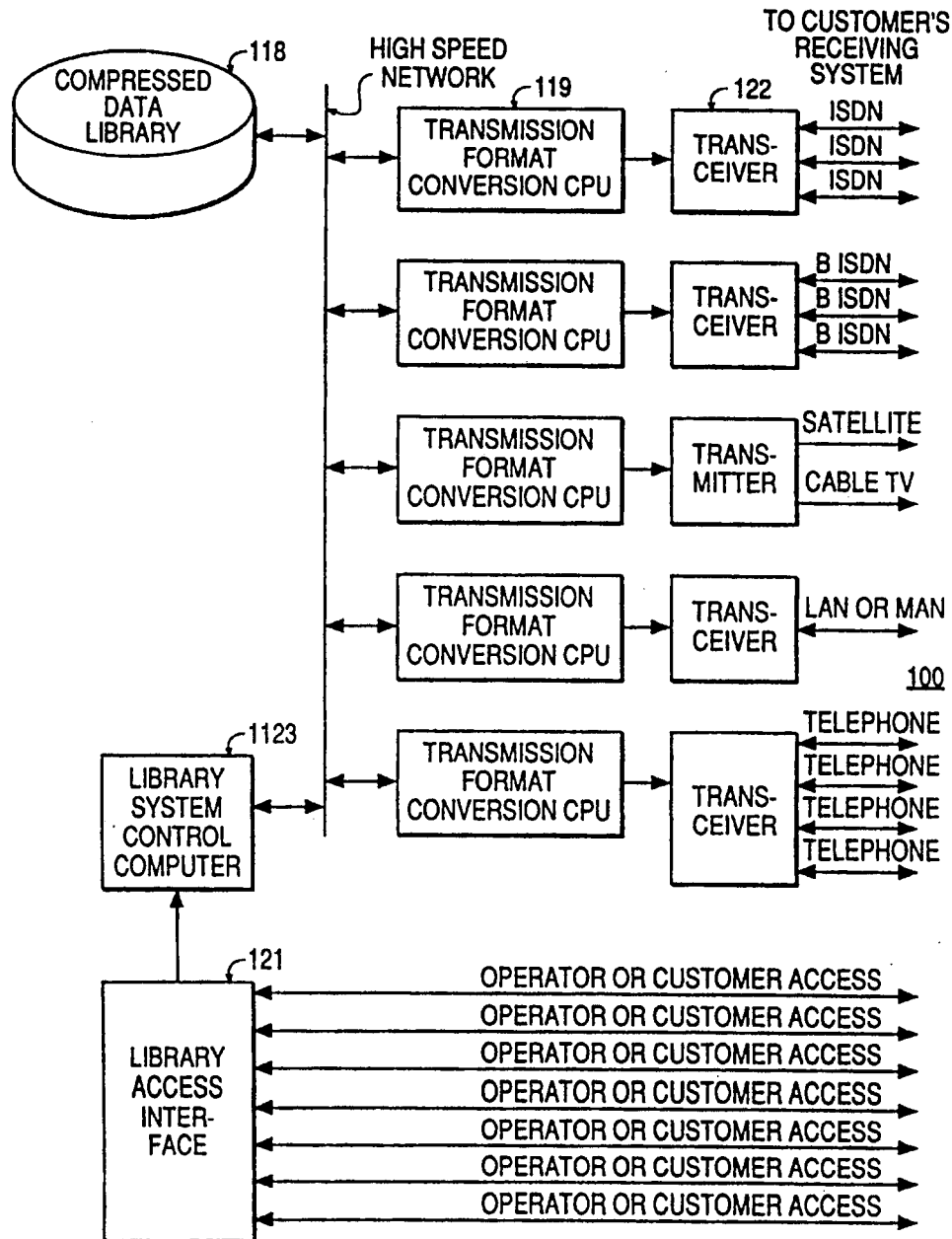


FIG. 2b

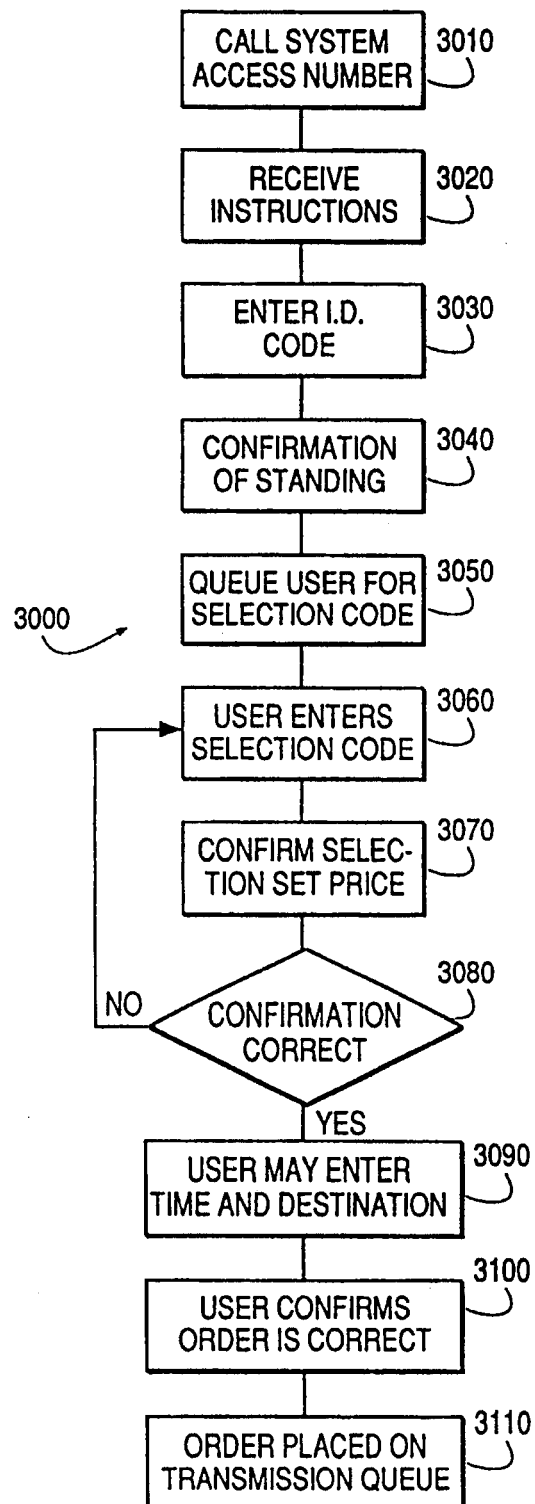
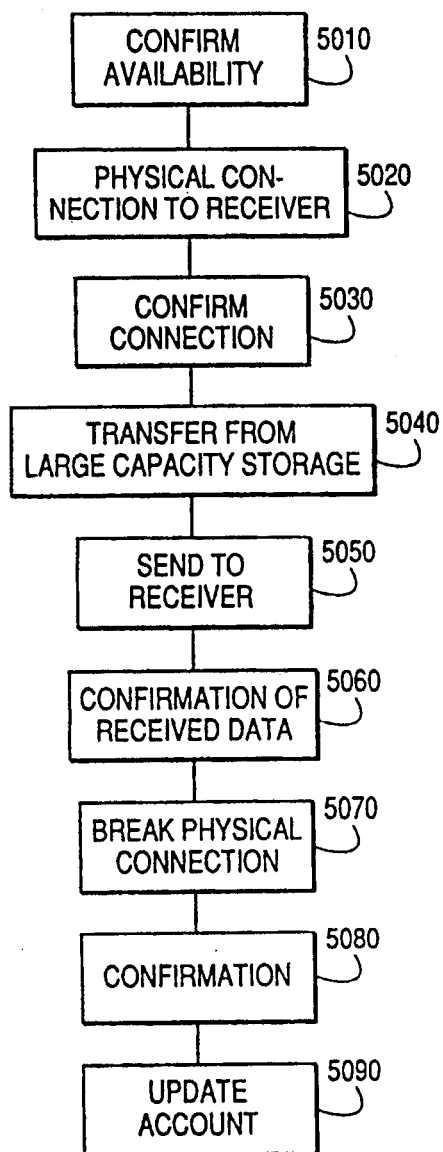
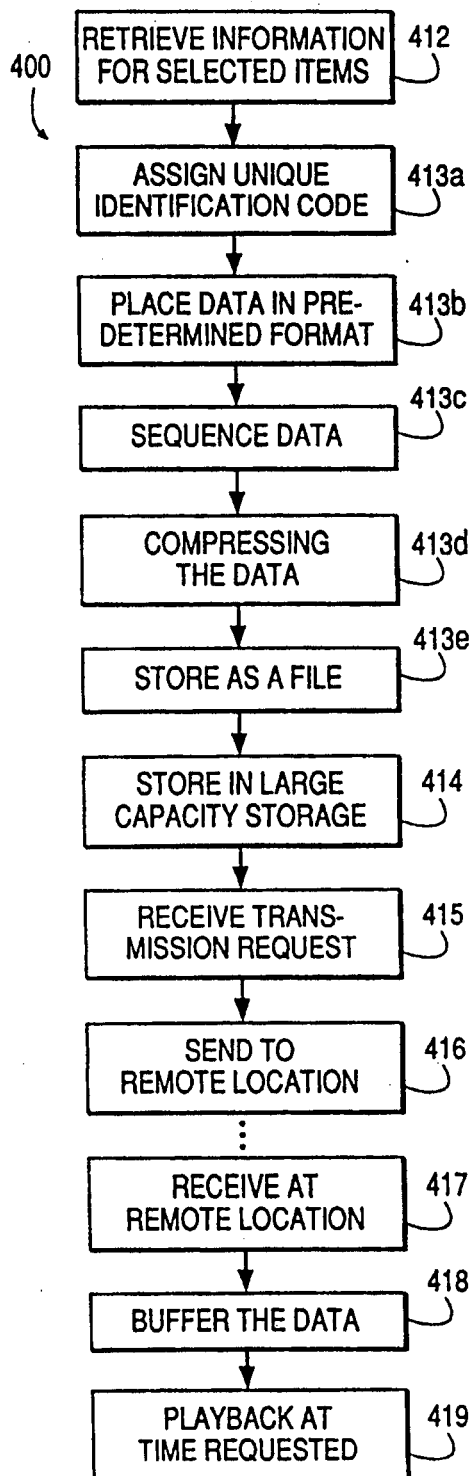


FIG. 3

**FIG. 5****FIG. 7**

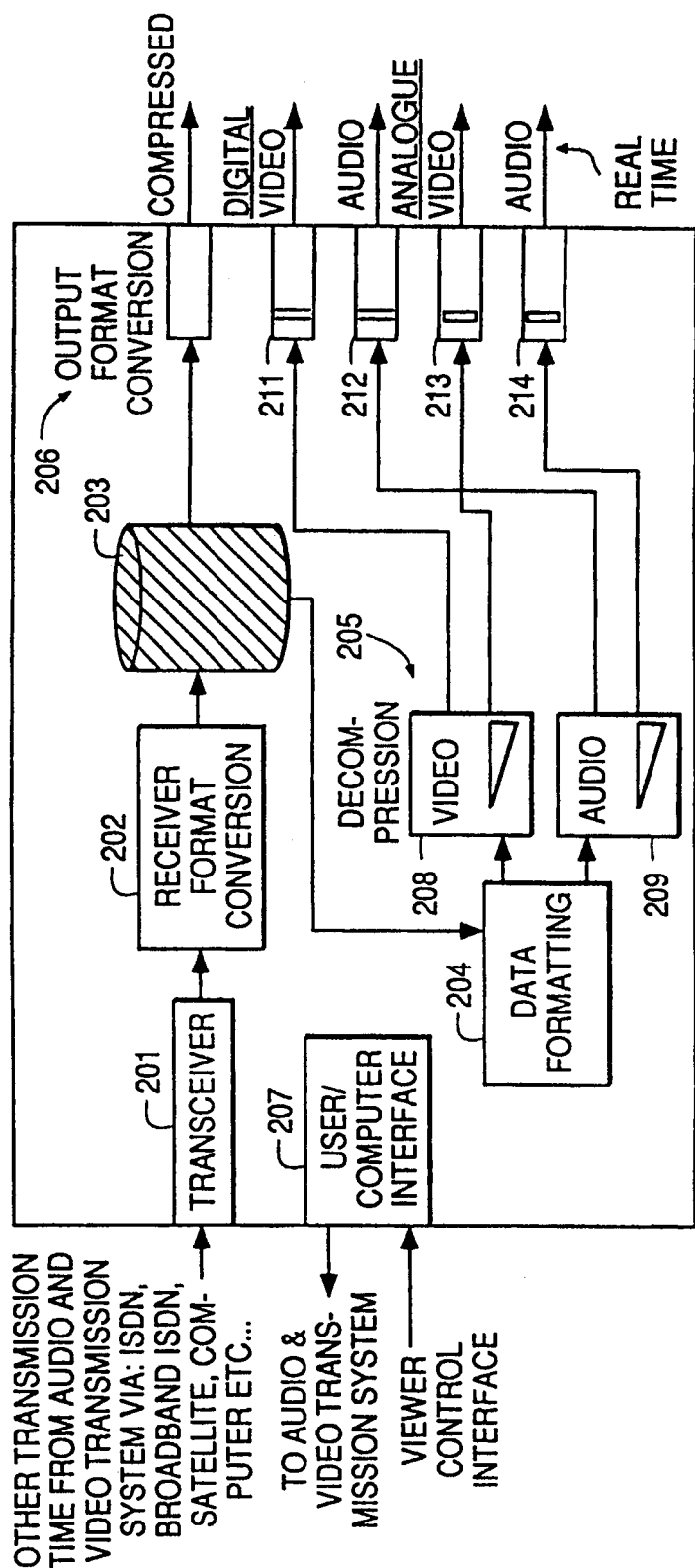
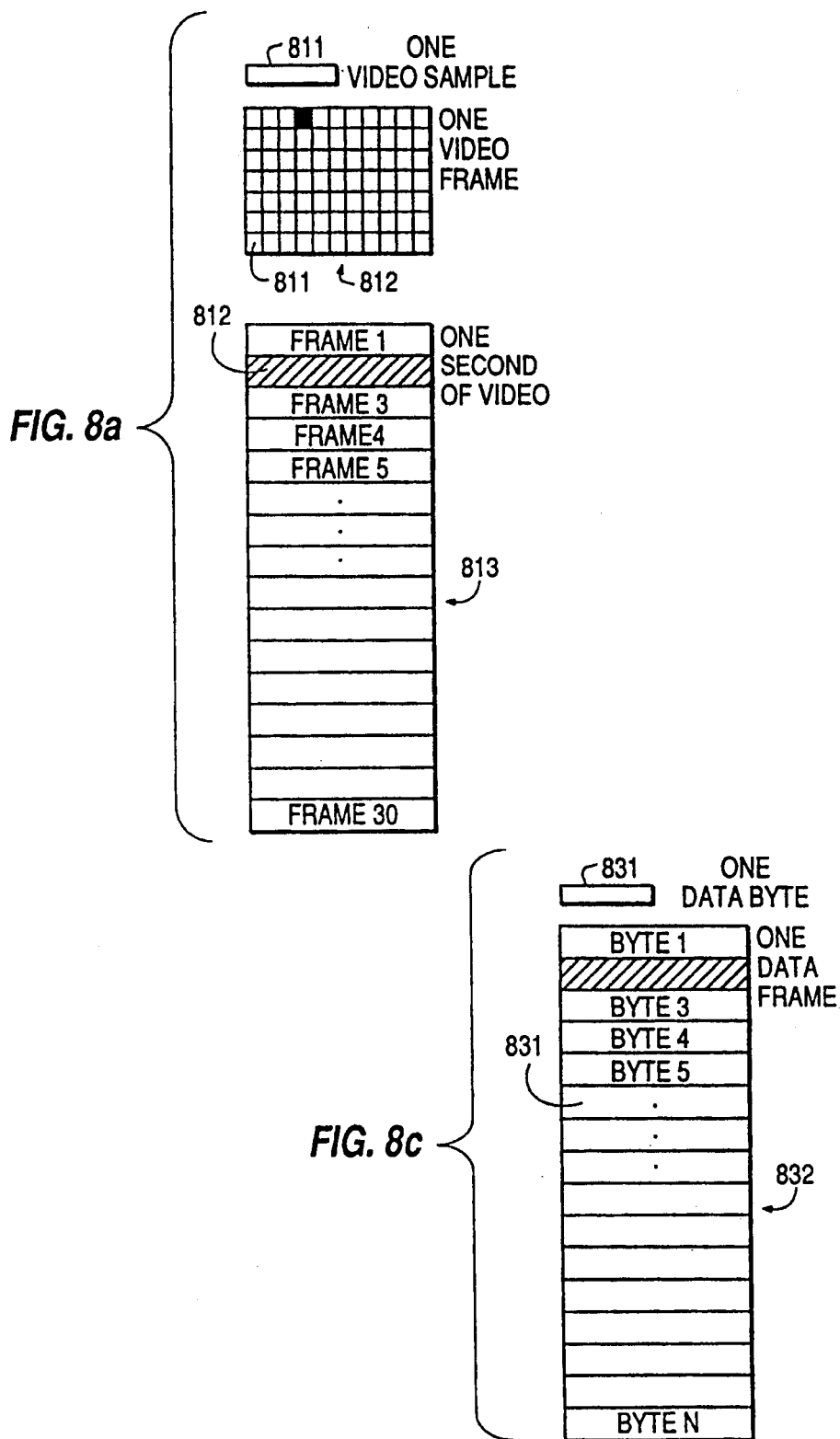
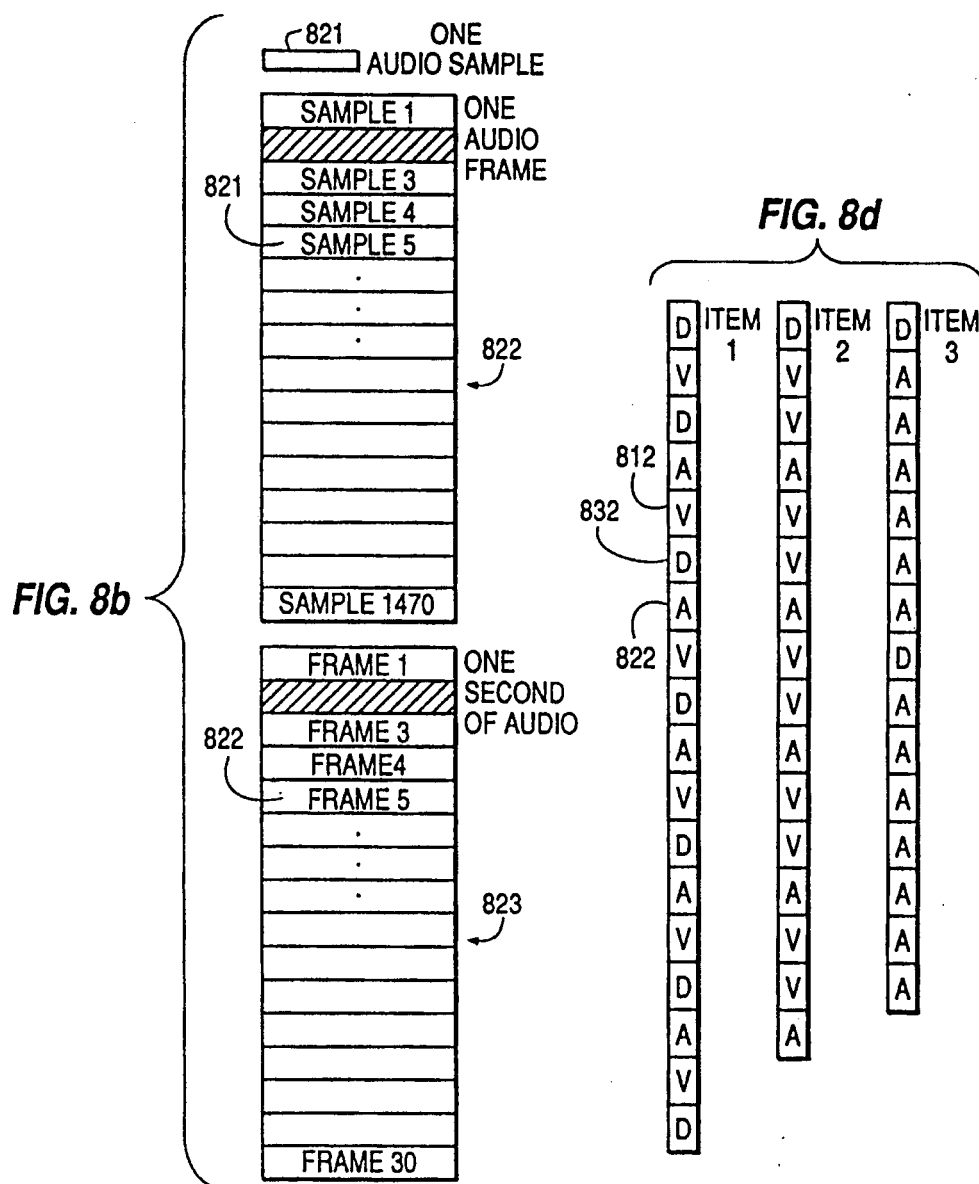


FIG. 6





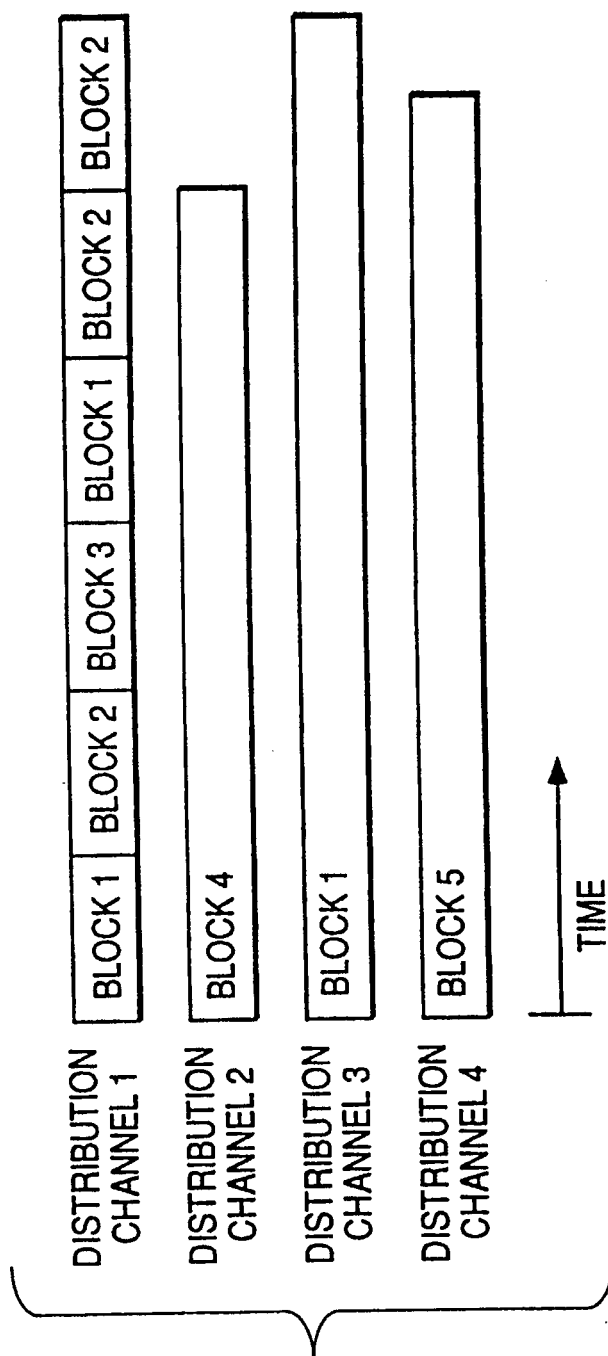


FIG. 8e

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AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM

This is a continuation of application Ser. No. 07/637,562, filed Jan. 7, 1991 U.S. Pat. No. 5,132,992.

BACKGROUND OF THE INVENTION

The present invention relates generally to an audio and video transmission and receiving system, and more specifically to such a system in which the user controls the access and the playback operations of selected material.

At the present time, only a video cassette recorder (VCR) or a laser disk player (LDP) allow a viewer to enjoy control over selection of particular audio/video material. Using either a VCR or an LDP requires the viewer to obtain a video tape either by rental or by purchase. Remote accessing of the material has not yet been integrated into an efficient system.

Several designs have been developed which provide the viewer with more convenient means of accessing material. One such design is disclosed in U.S. Pat. No. 4,506,387, issued to Walter. The Walter patent discloses a fully dedicated, multi-conductor, optical cable system that is wired to the viewer's premises. While the system affords the viewer some control over accessing the material, it requires that a location designated by the viewer be wired with a dedicated cable. The Walter system further requires the viewer be at that location for both ordering and viewing the audio/video material.

U.S. Pat. No. 4,890,320, issued to Monslow, describes a system which broadcasts viewer selected material to a viewer at a prescribed time. This system is limited in that it requires multiple viewers in multiple locations to view the audio/video material at the time it is broadcast, rather than allowing each viewer to choose his or her own viewing time. The system disclosed in Monslow also does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,590,516, issued to Abraham, discloses a system that uses a dedicated signal path, rather than multiple common carriers, to transmit audio/video programming. The receiver has no storage capability. The system provides for only display functions, which limits viewing to the time at which the material is ordered. Like Monslow, the Abraham system does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,963,995, issued to Lang, discloses an audio/video transceiver with the capability of editing and/or copying from one video tape to another using only a single tape deck. Lang does not disclose a system with one or more libraries wherein a plurality of system subscribers may access information stored in the film and tape library or libraries, and play back the selected information at a time and place selected by the subscriber.

It is therefore an object of the present invention to provide a user with the capability of accessing audio/video material by integrating both accessing and playback controls into a system that can use multiple existing communications channels.

It is a further object of the present invention to provide a picture and sound transmission system which allows the user to remotely select audio/video material

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from any location that has either telephone service or a computer.

A still further object of the present invention is to provide a picture and sound transmission system wherein the selected audio/video material is sent over any one of several existing communication channels in a fraction of real time to any location chosen by the user that has a specified receiver.

Another object of the present invention is to provide a picture and sound transmission system wherein the user may play back the selected audio/video material at any time selected by the user and retain a copy of the audio/video material for multiple playbacks in the future.

Another object of the present invention is to provide a picture and sound transmission system wherein the information requested by the user may be sent as only audio information, only video information, or as a combination of audio and video information.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

SUMMARY OF THE INVENTION

To achieve the objects in accordance with the purposes of the present invention, as embodied and described herein, the transmission and receiving system for providing information to remote locations comprises source material library means prior to identification and compression; identification encoding means for retrieving the information for the items from the source material library means and for assigning a unique identification code to the retrieved information; conversion means, coupled to identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks; compression means, coupled to the ordering means, for compressing the formatted and sequenced data; compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data received from the compression means with the unique identification code assigned by the identification encoding means; and transmitter means, coupled to the compressed data storing means, for sending at least a portion of a specific file to a specific one of the remote locations.

The present invention further comprises a distribution method responsive to requests identifying information to be sent from a transmission system to a remote location, the method comprising the steps of storing audio and video information in a compressed data form; requesting transmission, by a user, of at least a part of the stored compressed information to the remote location; sending at least a portion of the stored compressed information to the remote location; receiving the sent information at the remote location; buffering the processed information at the remote location; and playing back the buffered information in real time at a time requested by the user.

Additionally, the present invention comprises a receiving system responsive to a user input identifying a choice of an item stored in a source material library to be played back to the subscriber at a location remote

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from the source material library, the item containing information to be sent from a transmitter to the receiving system, and wherein the receiving system comprises transceiver means for automatically receiving the requested information from the transmitter as compressed formatted data blocks; receiver format conversion means, coupled to the transceiver means, for converting the compressed formatted data blocks into a format suitable for storage and processing resulting in playback in real time; storage means, coupled to the receiver format conversion means, for holding the compressed formatted data; decompressing means, coupled to the receiver format conversion means, for decompressing the compressed formatted information; and output data conversion means, coupled to the decompressing means, for playing back the decompressed information in real time at a time specified by the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate the presently preferred apparatus and method of the invention and, together with the general description given above and the detailed description of the preferred embodiment given below serve to explain the principles of the invention. In the drawings:

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention;

FIGS. 2a and 2b are detailed block diagrams of preferred implementations of the transmission system of the present invention;

FIG. 3 is a flowchart of a preferred method of ordering a selection from a library in accordance with the present invention;

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention;

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention;

FIG. 6 is a block diagram of a preferred implementation of the receiving system of the present invention;

FIG. 7 is a flowchart of a preferred method of distribution of the present invention; and

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention. FIGS. 1a, 1b, 1d, 1e, 1f, and 1g each show transmission system 100, described in more detail below with respect to FIGS. 2a and 2b. A user of the transmission and receiving system of the present invention preferably accesses transmission system 100 by calling a phone number or by typing commands into a computer. The user then chooses audio and/or video material from a list of available items which he or she wants to listen to and/or watch.

As shown in FIG. 1a, the transmission and receiving system may preferably comprise a peer to peer configuration where one transmission system 100 communicates with one reception system 200. As shown in FIG. 1b, the transmission and receiving system of the present invention may alternatively comprise a plurality of

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reception systems 200, 200', 200'', and 200''', which are each associated with a single transmission system 100.

FIG. 1c shows a high level block diagram of the transmission and receiving system of the present invention including remote order processing and item database 300, described in more detail with respect to FIG. 3. Remote order processing and item database 300 preferably enables users to access desired items by remote communication. The remote order processing and item database 300 may communicate with a plurality of transmission systems 100, 100', 100'', and 100''', each of which communicates with a respective set of reception systems 200, 200', 200'', and 200'''. Each of the reception systems in sets 200, 200', 200'', and 200''' may preferably communicate with a plurality of users.

FIG. 1d shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of users via a reception system 200 configured as a cable television system.

FIG. 1e shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality reception systems 200 and 200'. In the configuration shown in FIG. 1e, reception system 200 is a direct connection system wherein a user is directly connected to transmission system 100. Reception system 200' preferably includes a first cable television system 200a and a second cable television system 200b. Users of cable television systems 200a and 200b are indirectly connected to transmission system 100.

FIG. 1f shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing via several channels to reception systems 200 and 200'. Reception system 200 is preferably non-buffering. In such a system, users are directly connected to transmission system 100, as in reception system 200 in FIG. 1e.

Reception system 200' shown in FIG. 1f is a cable television system, as shown in reception system 200' of FIG. 1e. In FIG. 1f, the reception system 200' is preferably buffering, which means that users may receive requested material at a delayed time. The material is buffered in intermediate storage device 200c in reception system 200'.

In the configuration of FIG. 1f, decompression of the requested material may preferably occur at the head end of a cable television reception system 200'. Thus, distribution may be provided to users via standard television encoding methods downstream of the head end of the cable distribution system. This method is preferred for users who only have cable television decoders and standard television receivers.

FIG. 1g shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing to a reception system 200, which then preferably transmits requested material over airwave communication channels 200d, to a plurality of users. The transmission and receiving system shown in FIG. 1g may preferably transmit either compressed or uncompressed data, depending on the requirements and existing equipment of the user. The airwave transmission and receiving system shown in FIG. 1g may preferably employ either VHF, UHF or satellite broadcasting systems.

With respect to the transmission and receiving systems set forth in FIGS. 1a-1g, the requested material may be fully compressed and encoded, partly decom-

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pressed at some stage in transmission system 100, or fully decompressed prior to transmission. The reception systems 200 may either buffer the requested material for later viewing, or decompress in real time the requested material as it is distributed by transmission system 100. Alternatively, the reception systems 200 of the present invention may perform a combination of buffering and non-buffering by buffering some of the requested material and decompressing the remainder of the requested material for immediate viewing as it is distributed by transmission system 100.

In direct connection configurations, such as reception systems 200 shown in FIGS. 1e and 1f, the user preferably selects the reception system 200 to which the requested material is sent, and optionally selects the time playback of the requested material as desired. Accordingly, the user may remotely access the transmission system 100 from a location different than the location of reception system 200 where the material will be sent and/or played back. Thus, for example, a user may preferably call transmission system 100 from work and have movie sent to their house to be played back after dinner or at any later time of their choosing.

In non-direct connection reception systems such as shown in reception system 200' of FIG. 1f, intermediate storage device 200c may preferably include, for example, sixteen hours of random access internal audio and video storage. A reception system with such storage is capable of storing several requested items for future playback. The user could then view and/or record a copy of the decompressed requested material in real time, or compressed in non-real time, at a time of their choosing. Accordingly, the user would not have to make a trip to the store to purchase or rent the requested material.

In any of the transmission and receiving systems illustrated in FIGS. 1a-1g, the requested material may be copy protected. To achieve copy protection, the requested material, as an item, is encoded as copy protected during storage encoding in transmission system 100. The user may then play back the item only one time. The user may also optionally review select portions of the item prior to its automatic erasure from the memory of the reception system 200. In this way, requested material may be distributed to "view only" users and also to "view and copy" users who wish to retain copies of the distributed items.

Copy protected programs, when decompressed and played back, would have a copy protection technique applied to the analog and digital output signals. The analog video output is protected from copying through the use of irregular sync signals, which makes the signal viewable on a standard television but not recordable on an audio/video recorder. Digital output protection is effected through copy protect bit settings in the digital output signal, thus preventing a compatible digital recorder from recording the digital audio and/or video signal stream. A protected item will not be passed to the compressed data port of the digital recorder for off line storage.

FIGS. 2a and 2b illustrate detailed block diagrams of preferred implementations of the transmission system 100 of the present invention. Transmission system 100 may either be located in one facility or may be spread over a plurality of facilities. A preferred embodiment of transmission system 100 may preferably include only some of the elements shown in FIGS. 2a and 2b.

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Transmission system 100 of a preferred embodiment of the present invention preferably includes source material library means for temporary storage of items prior to conversion and storage in a compressed data library means. The items of information may include analog and digital audio and video information as well as physical objects such as books and records which require conversion to a compatible media type before converting, compressing and storing their audio and video data in the compressed data library means.

As shown in FIG. 2a, the source material library means included in transmission system 100 preferably includes a source material library 111. The source material library 111 may include different types of materials including television programs, movies, audio recordings, still pictures, files, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects. These materials are converted to or recorded on a media format compatible to the digital and analog inputs of the system prior to being compressed and stored in a compressed data library 118. The different media formats preferably include digital or analog audio and video tapes, laser disks, film images, optical disks, magnetic disks, computer tapes, disks and, cartridges.

The source material library 111, according to a preferred embodiment of the present invention, may preferably include a single source material library or a plurality of source material libraries. If there are a plurality of source material libraries, they may be geographically located close together or may be located far apart. The plurality of source material libraries may communicate using methods and channels similar to the methods and channel types which libraries may employ for communication with the receiving system 200 of the user, or the source material libraries may communicate via any available method.

Prior to being made accessible to a user of the transmission and receiving system of the present invention, the item must be stored in at least one compressed data library 118, and given a unique identification code by identification encoder 112. Storage encoding, performed by identification encoder 112, aside from giving the item a unique identification code, optionally involves logging details about the item, called program notes, and assigning the item a popularity code. Storage encoding may be performed just prior to conversion of the item for transmission to reception system 200, at any time after starting the conversion process, or after storing the item in the compressed data library 118.

In a preferred embodiment of the present invention, the method of encoding the information involves assigning a unique identification code and a file address to the item, assigning a popularity code, and inputting the program notes. This process is identical for any of the different media types stored in the source material library 111.

The transmission system 100 of the present invention also preferably includes conversion means 113 for placing the items from source material library 111 into a predetermined format as formatted data. In the preferred embodiment, after identification encoding is performed by identification encoder 112, the retrieved information is placed into a predetermined format as formatted data by the converter 113. The items stored in source material library 111 and encoded by identification encoder 112 may be in either analog or digital form. Converter 113 therefore includes analog input receiver

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127 and digital input receiver 124. If items have only one format, only one type of input receiver 124 or 127 is necessary.

When the information from identification encoder 112 is digital, the digital signal is input to the digital input receiver 124 where it is converted to a proper voltage. A formatter 125 sets the correct bit rates and encodes into least significant bit (lsb) first pulse code modulated (pcm) data. Formatter 125 includes digital audio formatter 125a and digital video formatter 125b. The digital audio information is input into a digital audio formatter 125a and the digital video information, if any, is input into digital video formatter 125b. Formatter 125 outputs the data in a predetermined format.

When the retrieved information from identification encoder 112 is analog, the information is input to an analog-to-digital converter 123 to convert the analog data of the retrieved information into a series of digital data bytes. Converter 123 preferably forms the digital data bytes into the same format as the output of formatter 125.

Converter 123 preferably includes an analog audio converter 123a and an analog video converter 123b. The analog audio converter 123a preferably converts the retrieved audio signal into pcm data samples at a fixed sampling rate. The analog video converter 123b preferably converts the analog video information, retrieved from identification encoder 123, into pcm data also at fixed sampling rates.

If the retrieved information being converted contains only audio information, then the audio signal is fed to the appropriate digital audio input or analog audio input. When the retrieved information contains both audio and video information, the audio and video signals are passed simultaneously to the audio and video converter inputs. Synchronization between the audio and video data can be maintained in this way.

If, for example, the retrieved information to be converted from the source material library 111 is a motion picture film, the picture frames in the film are passed through a digital telecine device to the digital input receiver 124. Format conversion is then preferably performed by digital video formatter 125b. Accompanying audio information is passed through an optical or magnetic digital playback device. This device is connected to digital audio formatter 125a.

In some cases, such as in inter-library transfers, incoming materials may be in a previously compressed form so that there is no need to perform compression by precompression processor 115 and compressors 128 and 129. In such a case, retrieved items are passed directly from identification encoder 112 to the compressed data formatter 117. The item database records, such as the program notes which may also be input from another system, to the compressed data formatting section 117, where this data, if necessary, is reformatted to make it compatible with the material stored in compressed data library 118. Such material may be received in the form of digital tapes or via existing communication channels and may preferably input directly to a short term storage 117' in the compressed data formatting section 117.

The transmission system 100 of the present invention also preferably includes ordering means for placing the formatted information into a sequence of addressable data blocks. As shown in FIG. 2a, the ordering means in the preferred embodiment includes time encoder 114. After the retrieved information is converted and formatted by the converter 113, the information may be

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time encoded by the time encoder 114. Time encoder 114 places the blocks of converted formatted information from converter 113 into a group of addressable blocks. The preferred addressing scheme employs time encoding. Time encoding allows realignment of the audio and video information in the compressed data formatting section 117 after separate audio and video compression processing by precompression processor 115 and compressor 116.

The converted formatted information of the requested material is then preferably in the form of a series of digital data bytes which represent frames of video data and samples of the audio data. A preferred relationship of the audio and video bytes to each other is shown in FIG. 8. Incoming signals are input and converted in sequence, starting with the first and ending with the last frame of the video data, and starting with the first and ending with the last sample of the audio data. Time encoding by time encoder 114 is achieved by assigning relative time markers to the audio and video data as it passes from the converter 113 through the time encoder 114 to the precompression processor 115. Realignment of audio and video data, system addressing of particular data bytes, and user addressing of particular portions of items are all made possible through time encoding.

Through the use of the address of an item and its frame number it is possible to address any particular block of audio or video data desired. From here, further addressing down to the individual byte is possible. Frames and groups of frames may preferably be further broken down, as necessary to the individual bytes and bits, as required for certain processing within the system.

User and system addressing requirements dictate the level of granularity available to any particular section of the system. Users are able to move through data in various modes, thus moving through frame addresses at various rates. For example, a user may desire to listen to a particular song. They may preferably enter the song number either when requesting the item from the compressed data library 118 and only have that song sent to their receiving system 200 or they may preferably select that particular song from the items buffered in their receiving system 200. Internal to the system, the song is associated with a starting frame number, which was indexed by the system operator via the storage encoding process. The system item database may contain information records for individual frames or groups of frames. These can represent still frames, chapters, songs, book pages, etc. The frames are a subset of, and are contained within, the items stored in the compressed data library 118. Time encoding by time encoder 114 makes items and subsets of items retrievable and addressable throughout the transmission system 100. Time encoding enables subsequent compression of the information to be improved because data reduction processes may be performed in the time dimension. This is described in greater detail below.

The transmission system 100 of the present invention also preferably includes data compression means for compressing the formatted and sequenced data. The sequence of addressable data blocks which was time encoded and output by time encoder 114 is preferably sent to precompression processor 115. The data arriving from time encoder 114 may be at various frame rates and of various formats. Precompression processor 115

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preferably includes audio precompressor 115a and video precompressor 115b.

Video precompression processor 115b buffers incoming video data and converts the aspects ratio and frame rate of the data, as required by compression processor 116. The frame buffer 131 of video precompression processor 115b holds all incoming data until the data is compressed by the data compressor 116. The incoming video data is processed for sample rate optimization, aspect ratio fitting and buffered in buffer 130 for compression processing by the video precompression processor 115b.

Video precompression processor 115b processes the incoming video data so that it fits into the aspects ratio of the transmission and receiving system of the present invention. When incoming material with a different aspect ratio than the aspect ratio of the system is selected, a chosen background is preferably placed around the inactive region of the video information. In this way, no data is lost to differences in the aspect ratio between incoming material, and the converted and compressed data stored in the transmission system 100. Images resulting from a different aspect ratio may have an inactive region where background information is contained, or may be converted into a best fit arrangement. Output from the video precompression processor 115b is stored in the frame buffer 131, which is dual ported and is directly addressable by video compressor 129.

The incoming audio data is processed for sample rate and word length optimization and is then buffered in buffer 130 for compression processing by the audio precompression processor 115a. Audio precompression processor 115a may preferably transcode incoming audio information, as required, to create the optimum sample rate and word lengths for compression processing. The output of the audio precompression processor 115a is a constant sample rate signal of a fixed word length which is buffered in frame buffer 130. The frame buffer 130 is dual ported and is directly addressable by audio compressor 128. Blocking the audio data into frames at audio precompression processor 115a makes it possible to work with the audio data as addressable packets of information.

Once precompression processing is finished, the frames are compressed by the data compressor 116. Compressor 116 preferably comprises an audio data compressor 128 and a video data compressor 129. The benefits of data compression performed by data compressor 116 are shortened transmission time, faster access time, greater storage capacity, and smaller storage space requirements. Compression processing performed by compressors 128 and 129 requires multiple samples of data to perform optimum compression. Audio and video information is preferably converted into blocks of data organized in groups for compression processing by audio compressor 128 and video compressor 129, respectively. These blocks are organized as frames, and a number of frames are contained respectively in the buffers 130 and 131. By analyzing a series of frames it is possible to optimize the compression process.

Audio data is preferably compressed by audio compressor 128 by application of an adaptive differential pulse code modulation (ADPCM) process to the audio data. This compression process, which may be implemented by the apt-x 100 digital audio compression system, is manufactured by Audio Processing Technology

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(APT). Audio compression ratios of 8× or greater are achieved with the APT system.

Compression by compressor 116 may be performed on a group of 24 video frames may preferably be passed in sequence to the frame buffer 130 of the video precompression processor 115b where they are analyzed by video compressor 129 which performs data reduction processing on the video data. Video compression is preferably performed by video compressor 129. Video compression is achieved by the use of processors running algorithms designed to provide the greatest amount of data compression possible. Video data compression preferably involves applying two processes: a discrete cosine transform, and motion compensation. This process is described in "A Chip Set Core of Image Compression", by Artieri and Colavin. Multiple frames of video data may preferably be analyzed for patterns in the horizontal (H), vertical (V), diagonal (zigzag) and time (Z) axis. By finding repetition in the video data, redundancy may be removed and the video data may be compressed with a minimal loss of information.

In accordance with a preferred embodiment of the present invention, the transmission system 100 may further comprise compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data with the unique identification code received from the data compression means. After compression processing by compressor 116, the compressed audio and video data is preferably formatted and placed into a single file by the compressed data storage means 117. The file may contain the compressed audio and/or video data, time markers, and the program notes. The file is addressable through the unique identification code assigned to the data by the identification encoder 112.

Further, according to the present invention, the transmission system preferably includes compressed data library means for separately storing composite formatted data blocks for each of the files. The compressed data storage means preferably includes compressed data library 118, as shown in FIG. 2b. After the data is processed into a file by the compressed data storage means 117, it is preferably stored in a compressed data library 118. In a preferred embodiment, compressed data library 118 is a network of mass storage devices connected together via a high speed network. Access to any of the files stored in compressed data library 118 is available from multiple reception systems 200 connected to the transmission and receiving system.

Stored items are preferably accessed in compressed data library 118 through a unique address code. The unique address code is a file address for uniquely identifying the compressed data items stored in the compressed data library section of a library system. This file address, combined with the frame number, and the library system address allow for complete addressability of all items stored in one or more compressed data libraries 118. Compressed data library addresses along with receiving system addresses are used to form a completely unique address for distribution system control.

The unique address code is an address assigned to the item by the system operator during storage encoding, which is preferably done prior to long term storage in the compressed data library 118. In a preferred embodiment, the unique address code is used for requesting and accessing information and items throughout the trans-

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mission and receiving system. The unique address code makes access to the requested data possible.

The storage encoding process performed by encoder 112 also allows entry of item notes and production credits. Production credits may include the title, names of the creators of the item such as the producer, director, actors, etc. Other details regarding the item which may be of interest and which may make the items more accessible are kept in an item database.

Item addresses are mapped to item names by identification encoder 112 and may preferably be used as an alternative method of accessing items. The item names are easier to remember, thus making user access more intuitive by using item names. The storage encoding entry process performed in identification encoder 112 operates a program which updates a master item database containing facts regarding items in the compressed data library system. The storage encoding process may be run by the system operator whereby the system operator accesses the master item database to track and describe items stored in one or more compressed data libraries. The names and other facts in the item database may preferably be updated at any time via the storage encoding process. Changes made to the master item database may be periodically sent to the remote order processing and item database 300.

As described in more detail later, a user may preferably access an item via its unique identification code, via its title, or the user may use other known facts for accessing an item. The user may access items in the compressed data library 118 directly using the unique address code or the user may obtain access via the remote order processing and item database 300. Indirect access via the remote order processing and item database 300 is possible using, for example, a synthesized voice system, a query type of computer program interface, or customer assistance operators. In addition to providing interactive access to the remote order processing and item database 300, a catalog listing some or all available titles may also preferably be published. With a published catalog, users may obtain the unique address code for an item very easily thereby allowing for retrieval from the compressed data library 118 without any help from an interactive system.

To achieve user access via an interactive system, facts about the items may be kept in files as a part of the items or the facts may be kept separately, for example, by systems which only inform users of the available items and take orders. For example, in systems which have portions split in separate locations, the facts about the items may be separated from the items themselves and stored in separate files. A system of this type can distribute user orders to other portions of the transmission and receiving system for ultimate distribution to the requesting user. Further, to support a plurality of users, multiple versions of the item database may preferably reside either on multiple database servers, in catalogs, or on other computer systems.

The item database master may reside in the system control computer 1123 where may be updated and kept current to the contents of the compressed data library 118. The data stored in the item database master may be accessed by users via application programs, running on the system control computer 1123, and on the reception system 200 of the user. Users may connect to the item database via any available telecommunication channels. Copies of the item database master may be updated and informed of new entries into compressed data library

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118 at periodic intervals determined by the system manager.

Other copies of the item database master may also be made available to users from the remote order processing and item database 300 which batch processes and downloads user requests to the control computer 1123 of the compressed data library 118 via standard telecommunications or high speed communication channels. Moreover, multiple remote order processing and item database 300 sites make it possible for more locations to process orders than there are library facilities, and thus make order processing more efficient.

Preferably, access of a requested item via the remote order processing and item database 300 operates as follows. If the user does not know the title of the desired item, he or she may request the item by naming other unique facts related to the item. For example, a user would be able to access an item about Tibetan Medicine by asking for all items which include information about "Tibet" and include information about "Medicine." The remote order processing and item database 300 would then be searched for all records matching this request. If there is more than one item with a match, each of the names of the matching items are preferably indicated to the user. The user then selects the item or items that he or she desires. Upon selection and confirmation, by the user, a request for transmission of a particular item or items is sent to the distribution manager program of the system control computer 1123. The request contains the address of the user, the address of the item, and optionally includes specific frame numbers, and a desired viewing time of the item.

The storage encoding process performed by identification encoder 112 also allows entry of a popularity code. The popularity code is preferably assigned on the basis of how often the corresponding item is expected to be requested from the compressed data library 118. This popularity code can be used to determine the most appropriate form of media for storage of the compressed data in a mixed media system. Mixed media systems are preferably employed as more cost effective storage in very large compressed data libraries 118. Once assigned, the popularity code may be dynamically updated, by factoring item usage against system usage. Thus, stored items are dynamically moved to the most appropriate media over their life in the compressed data library 118. If a particular item stored in compressed data library 118 is retrieved frequently by users, storage in compressed data library 118 is preferably on higher speed, more reliable, and probably more expensive media. Such media includes Winchester and magneto-optical disks.

If an item stored in compressed data library 118 is retrieved less frequently, it may be stored in the compressed data library 118 on a digital cassette tape. Examples of such cassette tapes are a Honeywell RSS-600 (Honeywell Inc. Minneapolis Minn.), Summus Juke-BoxFilm and tape library (Summus Computer Systems, Houston, Tx. 800-255-9638), or equivalent cassette tapes. All items stored in the compressed data library 118 are on line and are connected to the high speed network. Thus, they may be readily accessed.

Instead of using a remote order processing and item database 300, the compressed data library 118 may include the program notes which were input by the system operator. The program notes may preferably include the title of the item stored in the compressed data library 118, chapter or song titles, running times, cred-

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its, the producer of the item, acting and production credits, etc. The program notes of an item stored in the compressed data library 118 may be thus contained within the compressed data file formed in the compressed data formatter 117.

In some cases, where multiple compressed data libraries 118 are organized, the popularity code may dictate distribution of a particular item to multiple distribution systems. In such cases, a copy of the compressed data is sent to another library and the other library can then distribute the compressed data to users concurrently with the original compressed data library 118.

The compressed data library 118 is composed of a network of storage devices connected through a High Performance Parallel Interface (HPPI) Super Controller (available from Maximum Strategy Inc., San Jose, Ca.). Therefore, multiple communication controllers may preferably access the large quantity of data stored in compressed data library 118 at very high speeds for transfer to a reception system 200 of a user upon request. For more details on this configuration see Ohrenstein, "Supercomputers Seek High Throughput and Expandable Storage", Computer Technology Review, pp. 33-39 April 1990.

The use of an HPPI controller allows file placement onto multiple mass storage devices of the compressed data library 118 with a minimum of overhead. Data-based management software controls the location and tracking of the compressed data library 118 which can be located across multiple clusters of file servers connected together by one or more high speed networks over multiple systems.

The transmission system 100 of the present invention may also preferably include library access/interface means for receiving transmission requests to transmit items and for retrieving formatted data blocks stored in the compressed data library 118 corresponding to the requests from users. The compressed audio and/or video data blocks, along with any of the information about the item stored in the compressed data library 118 may be accessed via library access interface 121. The library access interface 121 receives transmission requests either directly from the users or indirectly by remote order processing and item database 300. The transmission format means 119 receives the request and retrieves the composite formatted data block of the requested item stored in compressed data library 118 and converts the compressed formatted data block into a format suitable for transmission. The requested item is then sent to the user via the transmitter 122 or directly via interface 121.

In a preferred embodiment of the present invention, customer access of an item stored in compressed data library 118 via the library access interface 121 may be performed in various ways. The methods of requesting a stored item are analogous to making an airline reservation or transferring funds between bank accounts. Just as there are different methods available for these processes it is desirable to have several ordering methods available to the users of the system of the present invention. For example, telephone tone decoders and voice response hardware may be employed. Additionally, operator assisted service or user terminal interfaces may be used.

Customer access via telephone tone decoders and voice response hardware is completely electronic and may preferably be performed between a system user

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and a computer order entry system. The user may obtain help in ordering an item from a computer synthesized voice. With such an access method, the user will normally be accessing a dynamic catalog to assist them.

Confirmation of selections and pricing information may preferably be given to the user prior to completion of the transaction.

This process of access, performed by remote order processing and item database configuration 300, shown in FIG. 1c, preferably includes the following steps, shown in flowchart 3000 of FIG. 3. First, the user calls the system access number (step 3010). Upon successfully dialing the system access number, the user receives instructions from the system (step 3020). The instructions may preferably include steps the user must take in order to place an order. Preferably, the instructions may be bypassed by the experienced user who knows how to place an order.

The user then enters a customer ID code by which the system accesses the user's account, and indicates to the system that the user is a subscriber of the system (step 3030). In response to the user entering his ID code in step 3030 the system confirms whether the user is in good standing (step 0340). If the user is in good standing, the system queues the user to input his request (step 3050).

The user request may preferably be made from a catalog sent to each of the subscribers of the system. The user will preferably identify his choice and enter the corresponding identification code of the item (step 3060). The system then preferably confirms the selection that the user has made and informs the user of the price of the selection (step 3070).

The user then indicates whether the confirmation performed in step 3070 is correct (step 3080). If the confirmation performed in step 3070 is correct, the user so indicates and then inputs a desired delivery time and delivery location (step 3090).

If the confirmation performed in step 3070 does not result in the selection desired by the user, the user re-inputs the item identification code in step 3060 and the confirmation steps 3070 and 3080 are repeated. Therefore, proper selection of the selected item is insured. Once there is confirmation, the user enters the playback time and destination in step 3090.

The user then preferably confirms that the order is correct (step 3100). The confirmation performed in step 3100 includes confirmation of the entire transaction including the selected item, the selected time of playback, and the location of playback. The transaction is then completed and the request is placed on a transmission queue at the appropriate compressed data library 118 (step 3110).

Access by the user via operator assisted service includes telephone operators who answer calls from the users. The operators can sign up new customers, take orders, and help with any billing problems. The operator will preferably have computer terminals which give them access to account information and available program information. Operators can also assist a user who does not know a title by looking up information stored in files which may contain the program notes, as described above. Once the chosen program is identified, the operator informs the user of the price. After the user confirms the order, the user indicates the desired delivery time and destination. The operator then enters the user request into the system. The request is placed in the transmission queue.

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Access by a user terminal interface method provides the user with access from various terminals including personal computers, and specialized interfaces built into the reception system 200 for the user. Such access allows a user to do a search of available programs from a computer screen. This process involves the steps 4000 shown in FIG. 4.

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention. In the preferred method of FIG. 4, the user first logs onto the user terminal interface (step 4010). After the user logs on, the user may preferably select a desired item by searching the database of available titles in the library system control computer 1123 or any remote order processing and item database 300 (step 4020). The search may preferably be performed using the database containing the program notes, described above with respect to FIGS. 2a and 2b. It is possible to process orders and operate a database of available titles at multiple locations remote of the source material library 111. Users and orders processing operators may preferably access such remote system and may place transmission requests from these systems. Orders placed on these systems will be processed and distributed to the appropriate libraries. After the desired item is found, the user selects the item for transmission at a specific time and location (step 4030).

To complete an order, the remote order processing and item database 300 preferably connects to the compressed data library 118 of choice via the library access interface 121 and communicates with the library system control computer 1123. Preferably the user's account ID, identification of the item for transmission and the chosen destination for the item are communicated. Through employment of distributed order processing systems of this type many orders may be processed with minimal library overhead.

All transmission requests from the access methods are placed into a transmission queue managed by the library system control computer 1123. This queue is managed by a program that controls the distribution of the requested item to the reception system 200 of the user. The queue manager program also operates in the system control computer and keeps track of the user ID, the chosen program and price, the user channel type, the number of requests for a given program, the latest delivery time, and the compressed data library media type (for example, high speed or low speed). From this information, the queue manager program makes best use of the available distribution channels and media for efficient transmission and storage of the requested items.

The queue manager program also manages the file transmission process for multiple requests for a single file, stored in the compressed data library 118. During a given time period, the queue manager program will optimize access to the compressed data library 118, wherever possible it will place the data on multiple outputs for simultaneous transmission to more than one requesting user.

The conversion performed by transmission data converter 119 encodes the data for the transmission channel. The transmission data converter transfers the desired segment of data from the compressed data library 118 onto the communication channel which is used to deliver the data to the reception system 200.

The transmission system 100 of the present invention preferably further includes transmitter means 122, coupled to the compressed data library 118, for sending at

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least a portion of a specific file to at least one remote location. The transmission and receiving system of the present invention preferably operates with any available communication channels. Each channel type is accessed through the use of a communications adaptor board or processor connecting the data processed in the transmission format converter 119 to the transmission channel.

A preferred embodiment of the present invention also includes means by which to access users via common access lines. These may include standard telephone, ISDN or B-ISDN, microwave, DBS, cable television systems, MAN, high speed modems, or communication couplers. Metropolitan Area Network (MANs) which are common carrier or private communication channels are designed to link sites in a region. MANs are described by Morreale and Campbell in "Metropolitan-area networks" (IEEE Spectrum, May 1990 pp. 40-42). The communication lines are used to transmit the compressed data at rates up to, typically, 10 Mb/sec.

In order to serve a multitude of channel types, a preferred embodiment of the present invention includes a multitude of output ports of each type connected to one or more computers on the transmission and receiving system. The management of transmission is then distributed. That is, the computer controlling the transmission queue tells the transmission encoding computer its task and then the task is executed by the transmission encoding computer, independent of the transmission queue computer. The transmission queue computer provides the data for transmission by the file server which also distributes to other transmitters located in the same or other transmission encoding computers.

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention. The queue manager program, in the distribution process, preferably confirms availability of an item from the compressed data library 118 and logically connects the item stored in compressed data library 118 to the communications controller, illustrated in FIG. 2a (step 5010). After availability is confirmed in step 5010, the data awaits transmission by the transmitter 122.

After availability is confirmed in step 5010, the communications controller preferably makes the physical connection to the reception system 200 of the user (step 5020). This is normally done by dialing the receiving device of the user. The reception system 200 preferably answers the incoming call and confirms the connection (step 5030).

Once connected to the reception system 200, in steps 5020 and 5030, the data stored in compressed data library 118 is preferably transferred in data blocks from the compressed data library 118 to the communications controller (step 5040). The data blocks are buffered by the communications controller. The buffered data is sent down the communications channel to the reception system 200 by transmitter 122 (step 5050).

The transmitter 122 places the formatted data onto the communications channel. This is an electrical conversion section and the output depends upon the chosen communication path. The signal is sent to the reception system 200 in either a two way or a one way communication process. In a standard telephone connection, the transmitter 122 is preferably a modem. When using an ISDN channel, the transmitter 122 is preferably a data coupler.

In a preferred embodiment of the present invention, many forms of communication channels may be em-

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ployed. Distribution of information is by common carrier communication channels whenever possible. These channels include common telephone service, ISDN and Broadband ISDN, DBS, cable television systems, microwave, and MAN.

In order that reception is performed efficiently, the reception system 200 confirms reception of the initial data block before receiving the remaining data blocks whenever possible (step 5060). After all data blocks have been received and reception is confirmed, the communications controller breaks the physical connection to the reception system 200 (step 5070). Then, confirmation of the transmission is sent to the queue manager (step 5080). Finally, the queue manager updates the list and sends the information to the billing program, which updates the account of the user (step 5090).

When item distribution occurs through a broadcasting method such as a communications satellite, the process is one way, with ongoing reception not being confirmed by the reception system 200. In these situations, some further redundancy is included by transmission formatter 122 with the data blocks for error correction processing to be performed in the reception system 200. In such one way communication situations, the queue manager program running in library system control computer 1123 confirms reception, via telephone line connection for example, to the reception system 200 after distribution. This should occur prior to updating the user's account and the dispatch lists.

The real time output signals are output to a playback system such as an audio amplifier and/or television. This output may also be sent to an audio/video recorder for more permanent storage. Moreover, in the preferred embodiment only non-copy protected data can be recorded on an audio/video recorder. Any material which is copy protected will be scrambled at the video output in a way which makes it viewable on a standard audio/video receiver but does not allow for recording of the material.

The reception system 200 has playback controls similar to the controls available on a standard audio/video recorder. These include: play, fast forward, rewind, stop, pause, and play slow. Since items are preferably stored on random access media, the fast forward and rewinding functions are simulations of the actual events which occur on a standard audio/video recorder. Frames do not tear as on an audio/video recorder, but in fast play modes they go by very quickly.

The library access interface 121 in the reception system 200 preferably includes a title window where a list of available titles are alphabetically listed. This window has two modes: local listing of material contained within the library system control computer 1123, and library listing for all available titles which may be received from the available, remotely accessible libraries. The titles listed in this window are sent from the database on the library system control computer 1123 or the remote order processing and item database 300.

The system may also preferably include dispatching control software which receives input from the remote order processing and item database 300 and sends distribution requests to the distribution systems. In instances where not all items are contained in each of the compressed data libraries 118, the dispatching software will keep a list of the available titles in a particular compressed data library 118. The dispatch software may also preferably coordinate network traffic, source material library 111 utilization, source material library 111

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contents, and connection costs. By proper factoring of these variables, efficient use of the available distribution channels may be achieved.

FIG. 6 illustrates a block diagram of a preferred implementation of the reception system 200 according to the present invention. The reception system 200 is responsive to user requests for information stored in source material library 111. The reception system 200 includes transceiver 201 which receives the audio and/or video information transmitted by transmitter 122 of the transmission system 100. The transceiver 201 automatically receives the information from the transmitter 122 as compressed formatted data blocks.

The transceiver 201 is preferably connected to receiver format converter 202. The receiver format converter 202 converts the compressed formatted data blocks into a format suitable for playback by the user in real time.

In the reception system 200 of the present invention, the user may want to play back the requested item from the source material library 111 at a time later than when initially requested. If that is the case, the compressed formatted data blocks from receiver format converter 202 are stored in storage 203. Storage 203 allows for temporary storage of the requested item until playback is requested.

When playback is requested, the compressed formatted data blocks are sent to data formatter 204. Data formatter 204 processes the compressed formatted data blocks and distinguishes audio information from video information.

The separated audio and video information are respectively decompressed by audio decompressor 209 and video decompressor 208. The decompressed video data is then sent simultaneously to converter 206 including digital video output converter 211 and analog video output converter 213. The decompressed audio data is sent simultaneously to digital audio output converter 212 and analog audio output converter 214. The outputs from converters 211-214 are produced in real time.

The real time output signals are output to a playback system such as a TV or audio amplifier. They may also be sent to an audio/video recorder of the user. By using the reception system 200 of the present invention, the user may utilize the stop, pause, and multiple viewing functions of the receiving device. Moreover, in a preferred embodiment of the present invention, the output format converters may be connected to a recorder which enables the user to record the requested item for further multiple playbacks.

FIG. 7 is a flow chart 400 of a preferred method of distribution of the present invention. The distribution method is preferably responsive to requests identifying information to be sent from the transmission system 100 to remote locations. Method 400 assumes that the items have already been stored in compressed data library 118.

As illustrated in FIG. 7, the first step of the distribution method 400 involves retrieving the information for selected items in the source material library 111, upon a request by a user of the distribution system (step 412). This is analogous to taking books off of a shelf at the local public library after the person has decided that he or she would like to read them.

After the information for the selected items is retrieved in step 412, the distribution method 400 of the present invention further comprises the step of processing the information for efficient transfer (step 413). The

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processing performed in step 413 preferably includes assigning a unique identification code to the retrieved information performed by identification encoder 112, shown and described with respect to FIG. 2a (step 413a). The processing also preferably includes placing the retrieved information into a predetermined format as formatted data by converter 113 (step 413b), and placing the formatted data into a sequence of addressable data blocks by ordering means 114 (step 413c).

Processing step 413 also includes compressing the formatted and sequenced data performed by data compressor 116 (step 413d), and storing as a file the compressed sequenced data received from the data compression means with the unique identification assigned by the identification encoding means (step 413e).

After the information is processed for efficient transfer, in substeps 413a-e of step 413, the distribution method 400 of the present invention preferably includes the step of storing the processed information in a compressed data library (step 414). Preferably, the compressed data library is analogous to compressed data library 118, described with respect to FIG. 2a.

After the information is stored in a compressed data library 118, the transmission and receiving system preferably waits to receive a transmission request (step 415). Upon receiving a transmission request, from transmission system 100, the compressed formatted data is preferably converted for output to a reception system 200, selected by the user. The information is preferably transmitted over an existing communication channel to a reception system 200, and is received by that system (step 417). When the information is received in step 417, it is preferably formatted for the particular type of reception system 200 to which the information is sent.

The received information is preferably buffered (step 418) by a storage means analogous to element 203 shown in FIG. 3. The information is preferably buffered so that it may be stored by the user for possible future viewings. The requested information is then played back to the reception system 200 of the user at the time requested by the user (step 419).

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system. FIG. 8a shows the block structure of video data where a video frame 812 is composed of a plurality of video samples 811, and a second of video 813 is composed of a plurality of video frames 812.

FIG. 8b shows the block structure of audio data where an audio data frame 822 is composed of a plurality of audio samples 821, and a second of audio 823 is composed of a plurality of audio data frames 822. FIG. 8c shows the block structure of a data frame 832 composed of a plurality of data bytes 831. The combination of the audio frames 812, video frames 822, and data frames 832 comprise the elements of a single item. FIG. 8d shows a block representation of for three illustrative items which may be stored in the source material library 111. Each of items 1-3 contains its own arrangement of video frames 812, audio frames 822, and data frames 832.

FIG. 8e shows methods of distribution to reception systems 200 with both multiplexed and non-multiplexed signal paths, both addressed and non-addressed blocks of items. A block of an item may be an entire item or, alternatively, may be only a portion of an item, as selected by a user. Further, the blocks may be composed of either compressed, as required by the configuration

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of the decompressed data, as required by the configuration of the reception system 200.

As shown in FIG. 8e, the same block, for example, block 1, may be simultaneously transmitted over different distribution channels. The blocks when transmitted over one of the distribution channels may have receiver addresses appended to the blocks or the reception system 200 may have been preconfigured to receive the blocks comprising data frames for particular items from the active distribution channel.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with the true scope and spirit of the invention being indicated by the following claims.

What is claimed is:

1. A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:

library means for storing items containing information;

identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;

compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;

compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and

transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to a reception system at a head end of a cable television system for subsequent transmission to one of the remote locations.

2. A distribution method responsive to requests from a user identifying items in a transmission system containing information to be sent from the transmission system to receiving systems at remote locations, the method comprising the steps of:

storing, in the transmission system, information from items in a compressed data form, the information including an identification code and being placed into ordered data blocks;

sending a request, by the user to the transmission system, for at least a part of the stored information to be transmitted to a reception system associated with a receiving system at one of the remote locations selected by the user;

sending at least a portion of the stored information from the transmission system to the reception system;

receiving the sent information by the reception system;

storing a complete copy of the received information in the reception system; and

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playing back the stored copy of the information from the reception system to the receiving system at the selected remote location at a time requested by the user.

3. A receiving system responsive to a user input identifying a choice of an item stored in a source material library at a transmission system to be played back to a user at a location remote from the source material library, the item containing information to be sent from the transmission system to the receiving system, the receiving system comprising:

requesting means for transmitting to the source material library in the transmission system the identity of the item;

transceiver means, coupled to the requesting means, for receiving the item from the transmission system as at least one compressed, formatted data block;

receiver format conversion means, coupled to the transceiver means, for converting the at least one compressed, formatted data block into a format suitable for storage processing, and for playback at the receiver system;

storage means, coupled to the receiver format conversion means, for storing a complete copy of the formatted data;

decompressing means, coupled to the receiver format conversion means, and located at a head end of a cable television system, for decompressing the copy of the formatted data; and

output data conversion means, coupled to the decompressing means, for playing back the decompressed copy of the data at a time specified by the user and at a user receiver.

4. A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:

library means for storing items containing information;

identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data;

ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;

compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;

compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and

transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to a reception system at a head end of a cable television system over an optical fiber communication path for subsequent transmission over a cable communication path to one of the remote locations.

5. A distribution method responsive to requests from a user identifying items in a transmission system containing information to be sent from the transmission

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system to receiving systems at remote locations, the method comprising the steps of:

storing, in the transmission system, information from items in a compressed data form, the information including an identification code and being placed into ordered data blocks;

sending a request, by the user to the transmission system, for at least a part of the stored information to be transmitted to a reception system associated with a receiving system at one of the remote locations selected by the user;

sending at least a portion of the stored information from the transmission system to the reception system over an optical fiber communication path;

receiving the sent information by the reception system;

storing a complete copy of the received information in the reception system; and

playing back the stored copy of the information sent over a cable communication path from the reception system to the receiving system at the selected remote location at a time requested by the user.

6. A receiving system responsive to a user input identifying a choice of an item stored in a source material library at a transmission system to be played back to a user at a location remote from the source material library, the item containing information to be sent from the transmission system to the receiving system, the receiving system comprising:

requesting means for transmitting to the source material library in the transmission system the identity of the item;

transceiver means, coupled to the requesting means, for receiving the item over an optical fiber communication path from the transmission system as at least one compressed, formatted data block;

receiver format conversion means, coupled to the transceiver means, for converting the at least one compressed, formatted data block into a format suitable for storage processing, and for playback at the receiver system;

storage means, coupled to the receiver format conversion means, for storing a complete copy of the formatted data;

decompressing means, coupled to the receiver format conversion means, and located at a head end of a cable television system, for decompressing the copy of the formatted data; and

output data conversion means, coupled to the decompressing means, for playing back the decompressed copy of the data, received over a cable communication path, at a time specified by the user and at a user receiver.

7. A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:

library means for storing items containing information;

identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data;

ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;

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compression means, coupled to the ordering means,
for compressing the formatted and sequenced data
blocks;
compressed data storing means, coupled to the data
compression means, for storing as files the com- 5
pressed, sequenced data blocks received from the
data compression means with the unique identifica-

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tion code assigned by the identification encoding
means; and
transmitter means, coupled to the compressed data
storing means, for sending at least a portion of one
of the files via an optical fiber communication path
to one of the remote locations.
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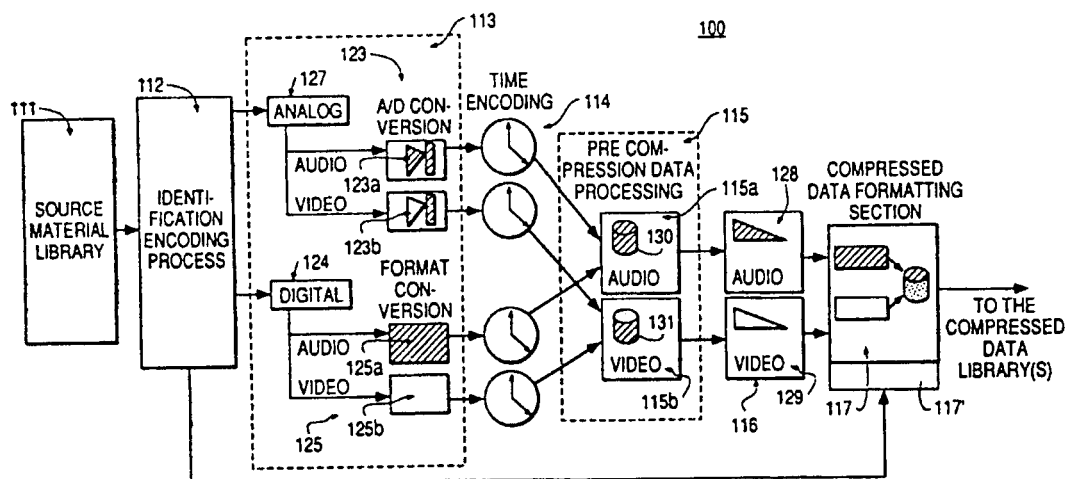
EXHIBIT

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[45] **Date of Patent:** Jul. 21, 1992

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- 58 Claims, 12 Drawing Sheets**



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FIG. 1a

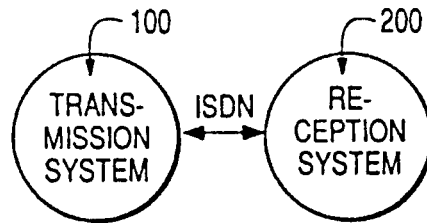


FIG. 1b

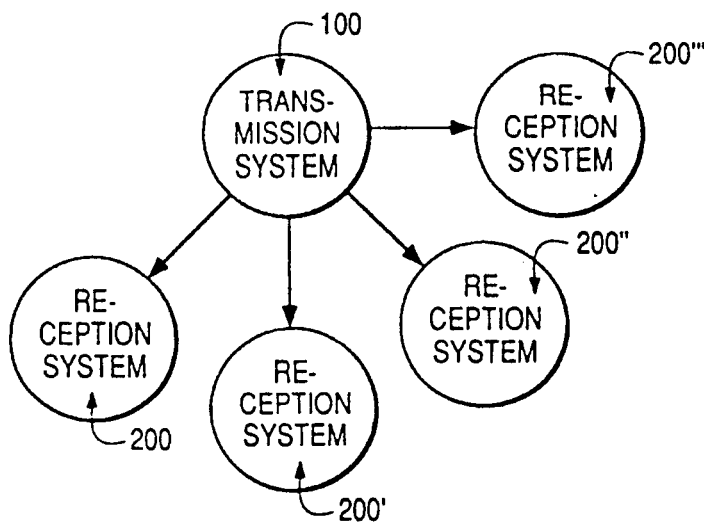
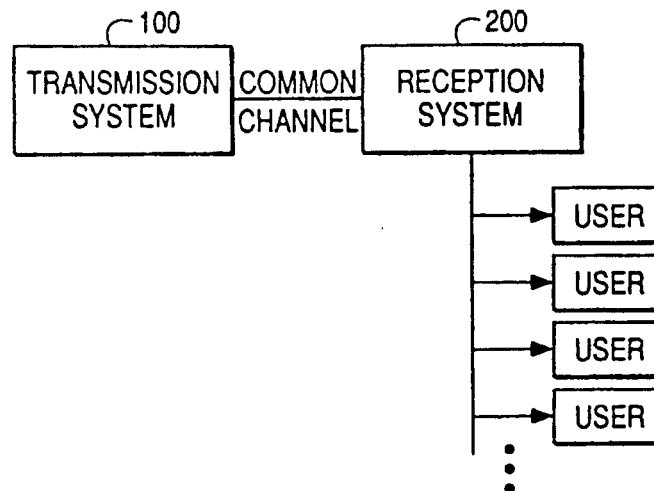
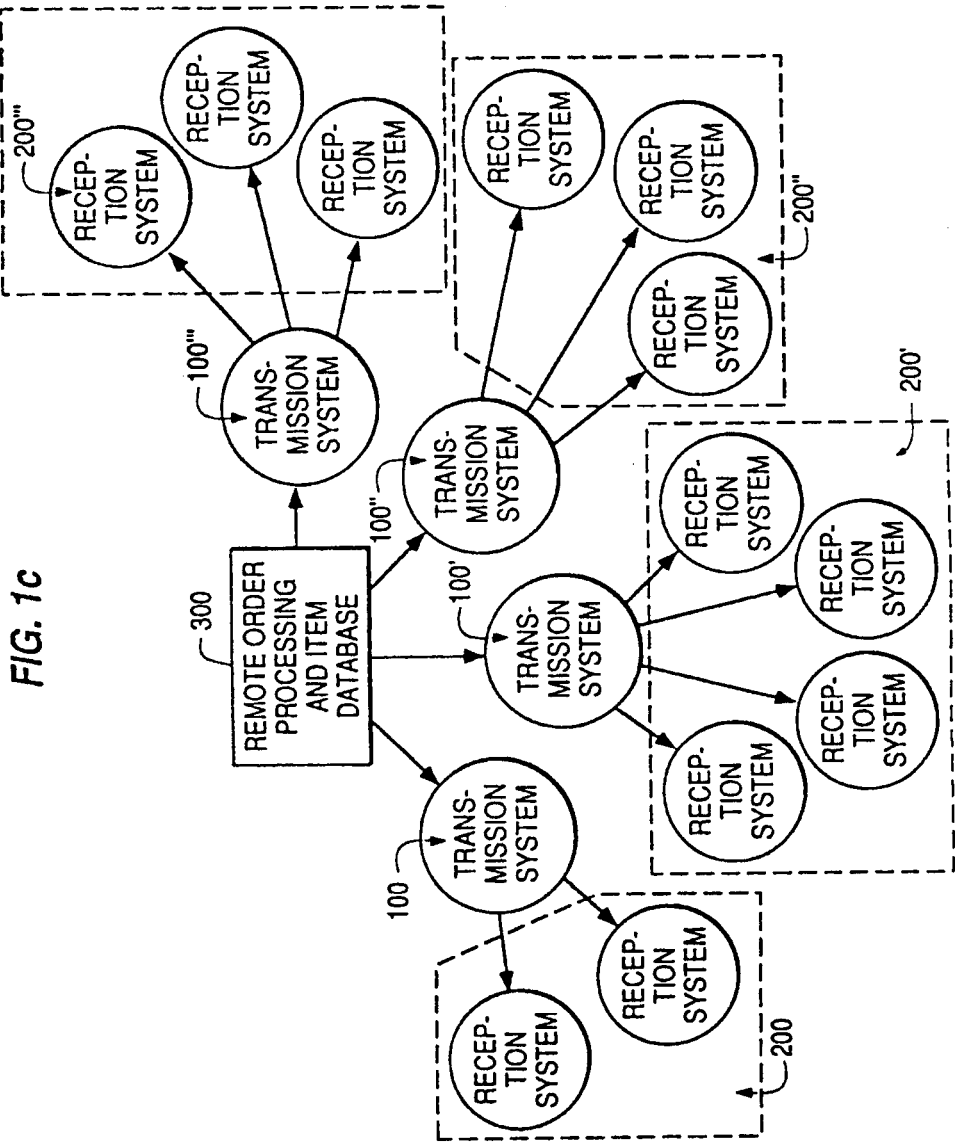


FIG. 1d





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FIG. 1e

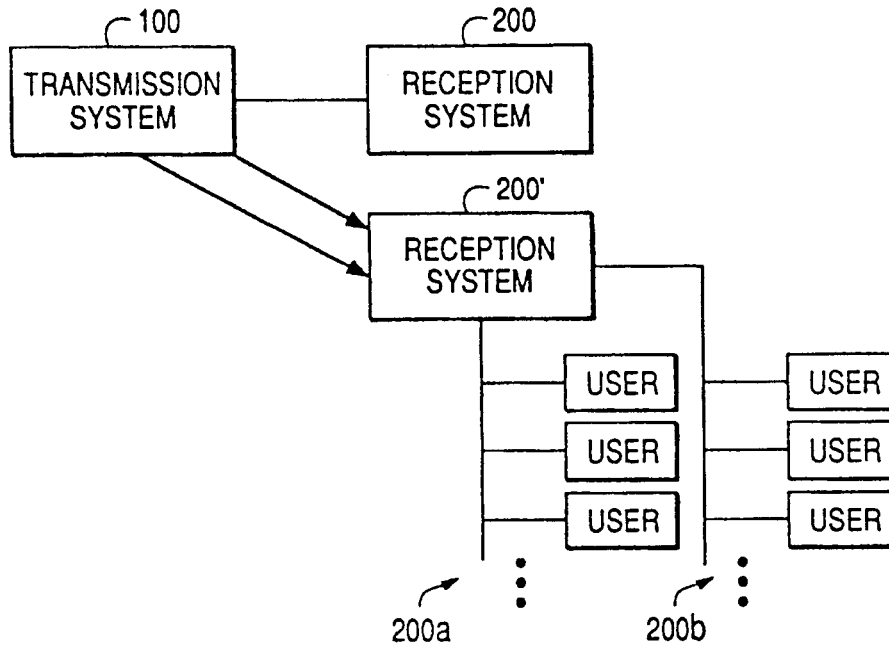
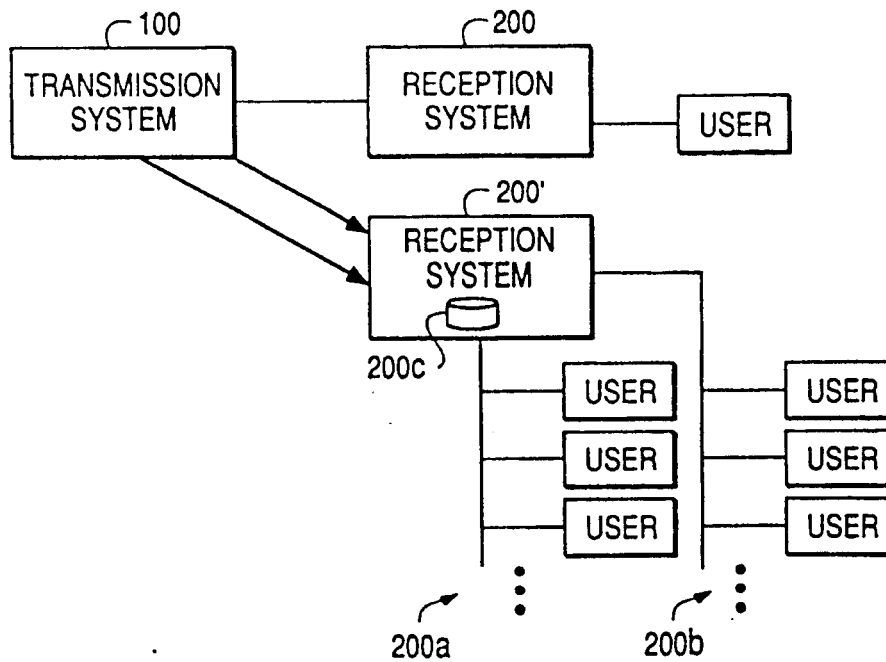


FIG. 1f



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FIG. 1g

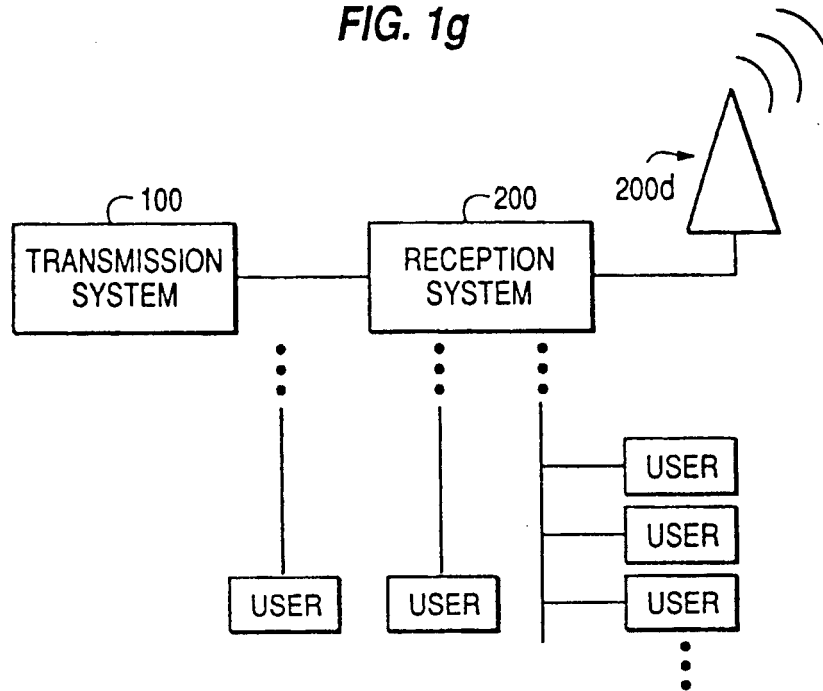
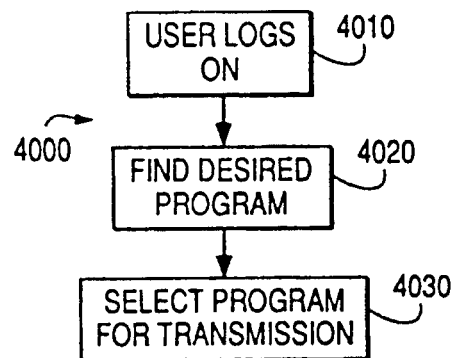


FIG. 4



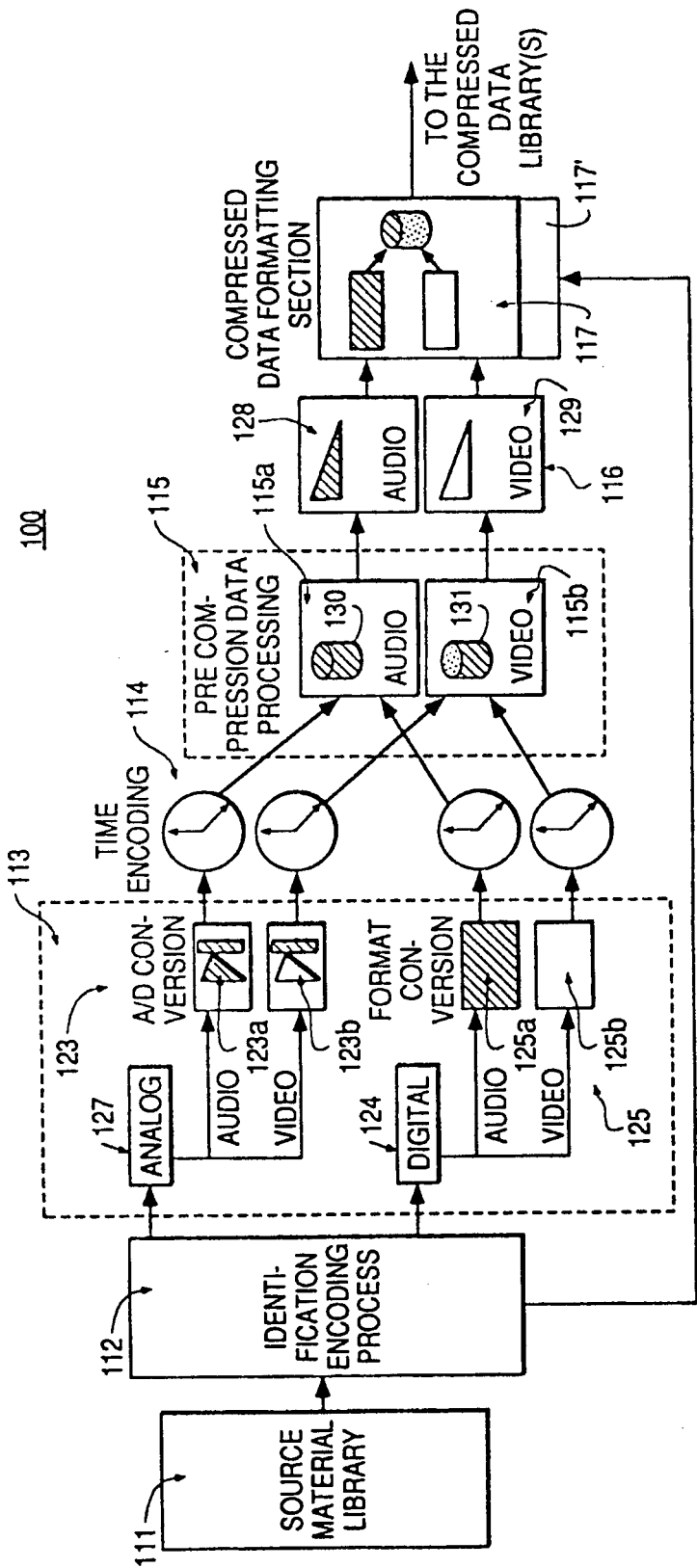


FIG. 2a

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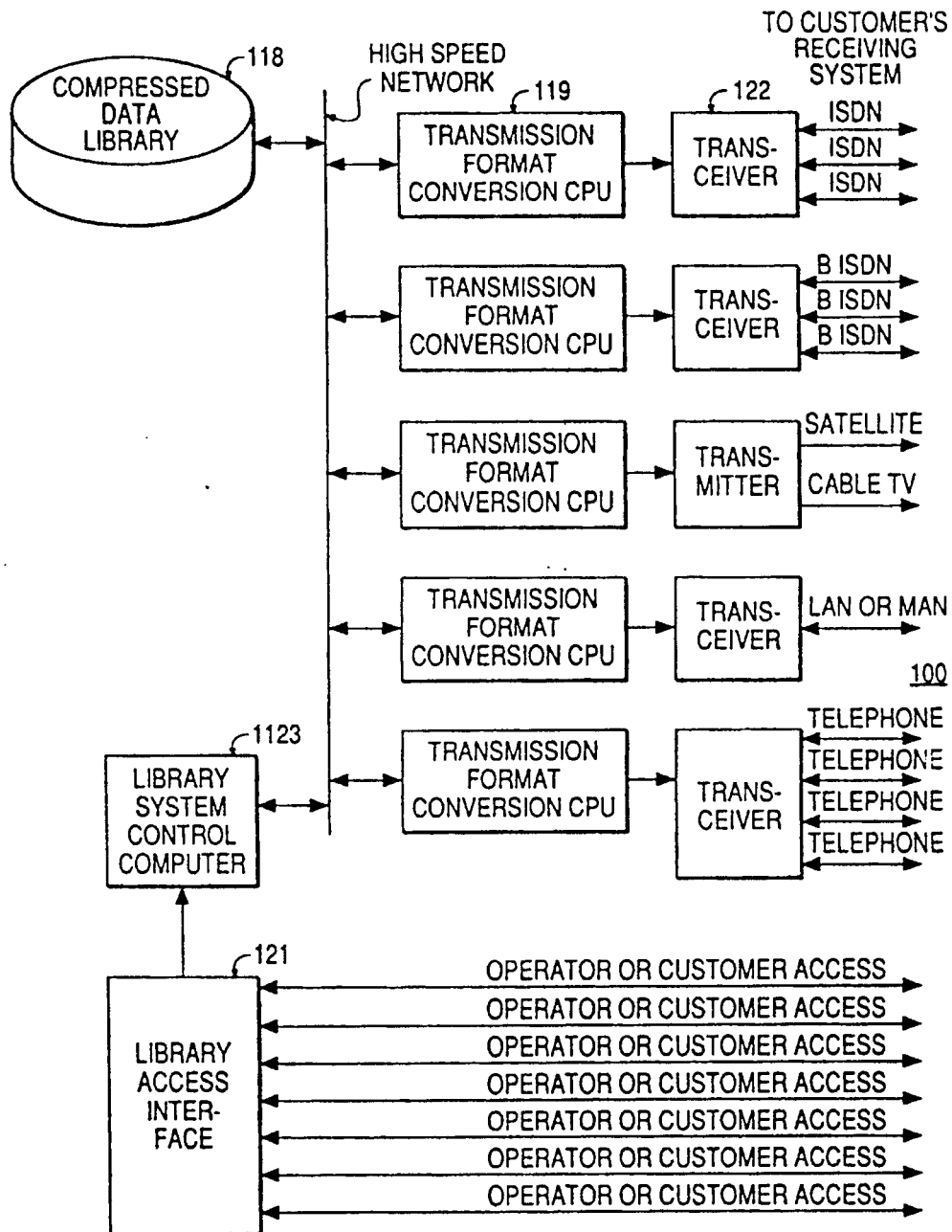


FIG. 2b

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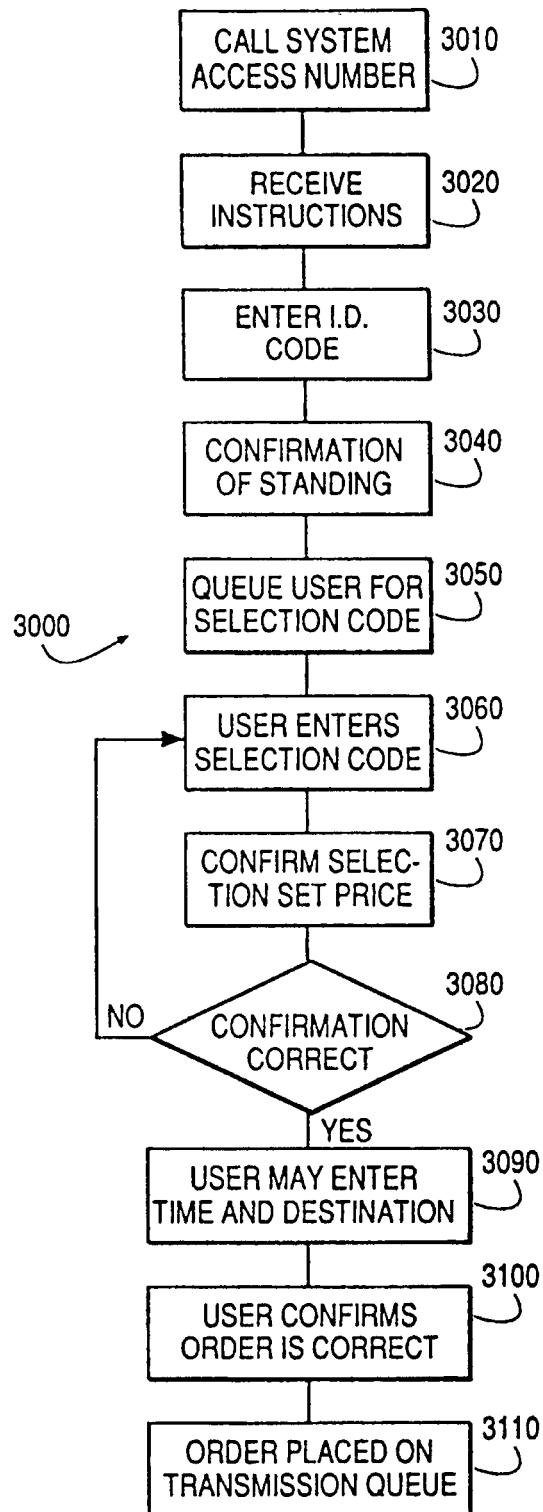


FIG. 3

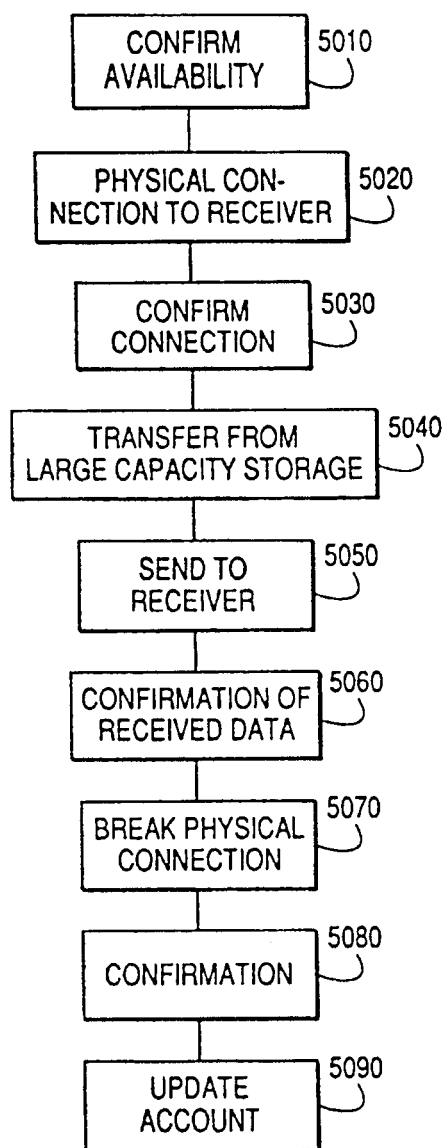


FIG. 5

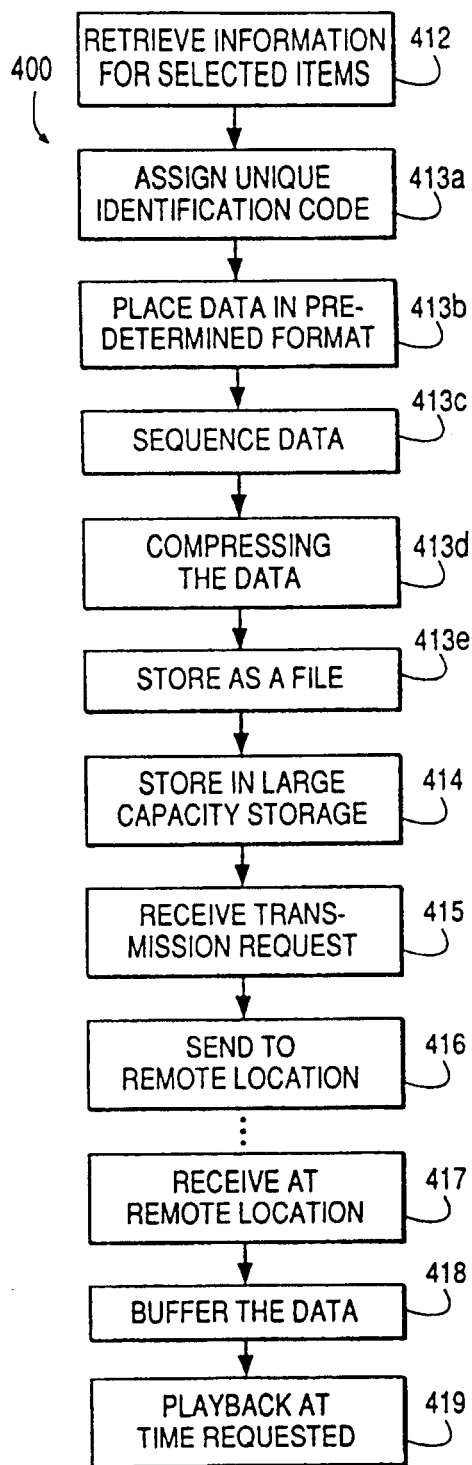


FIG. 7

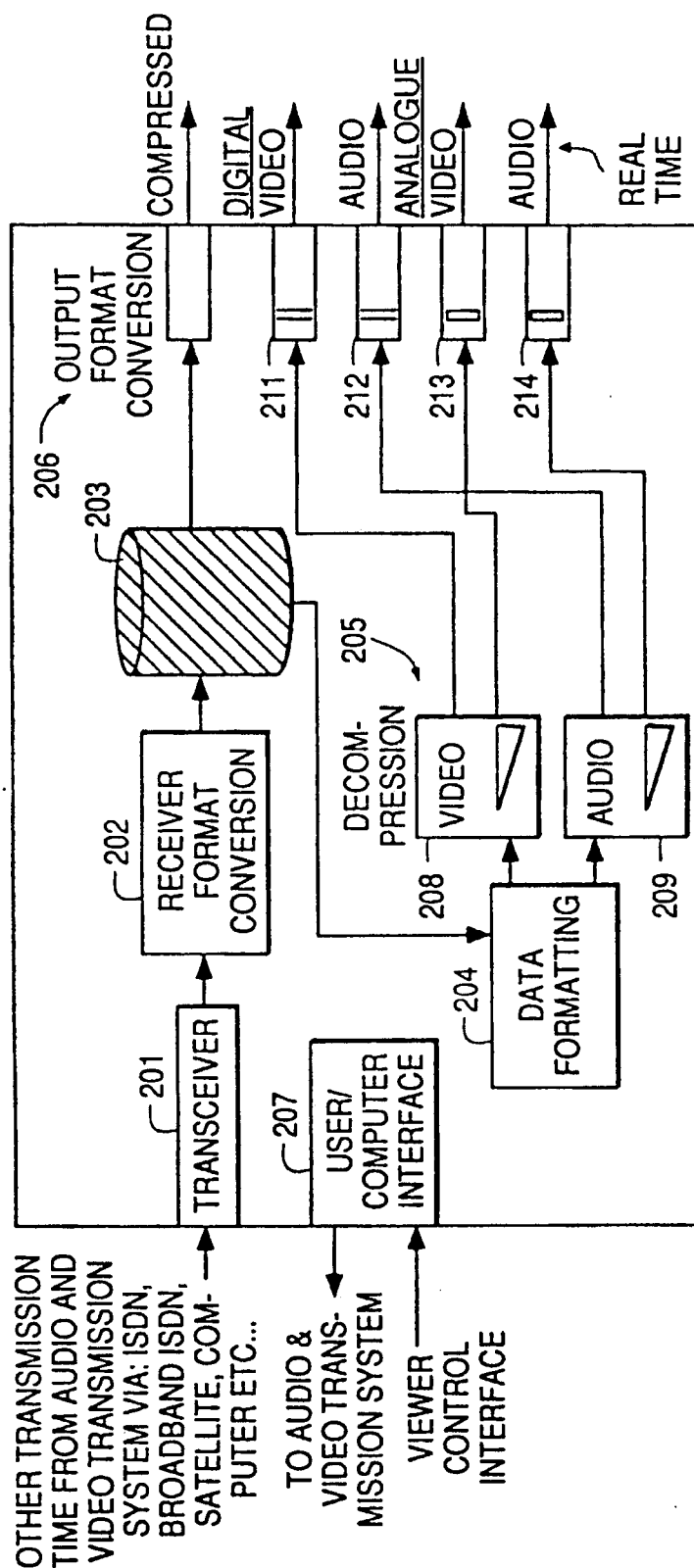


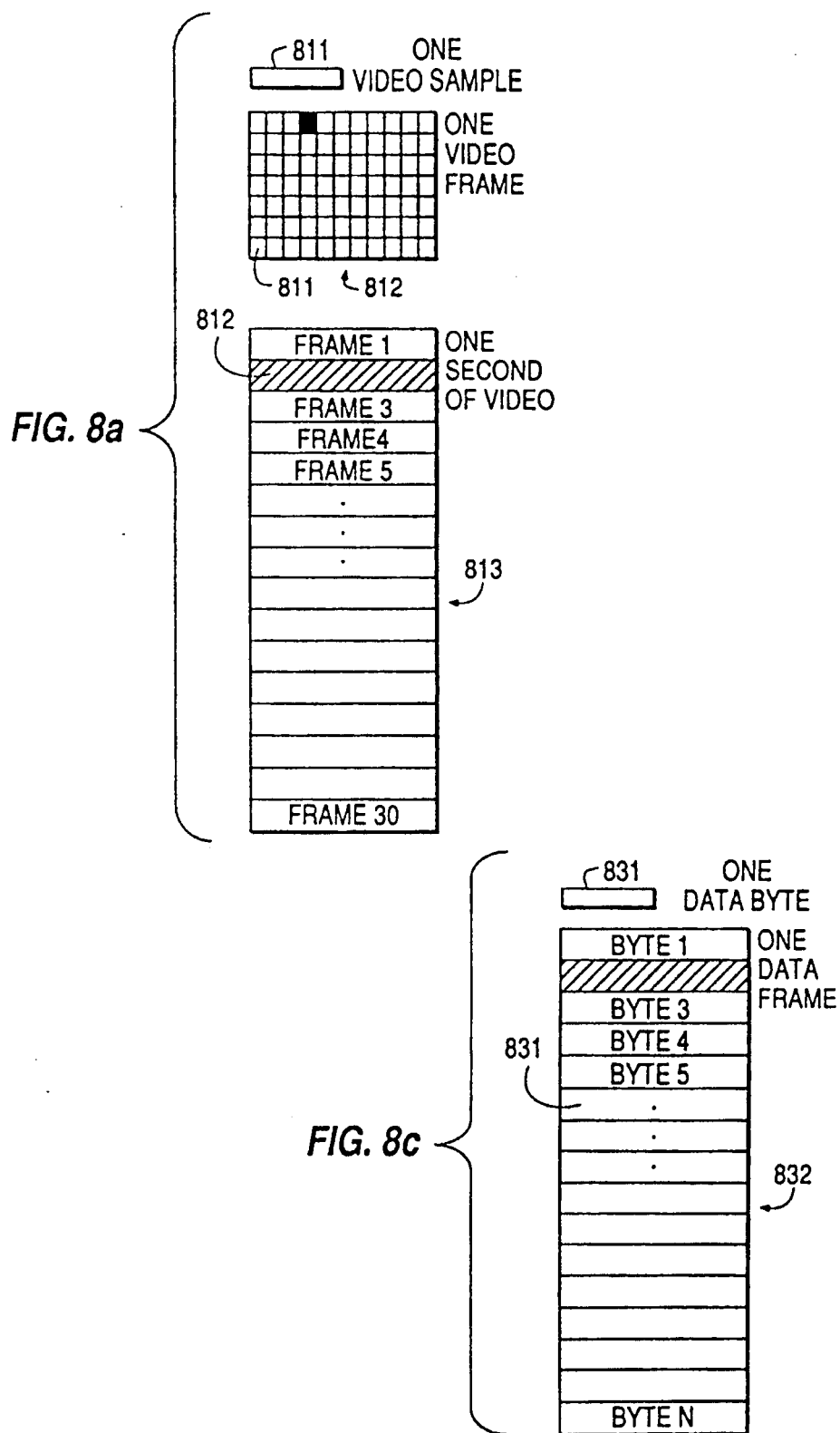
FIG. 6

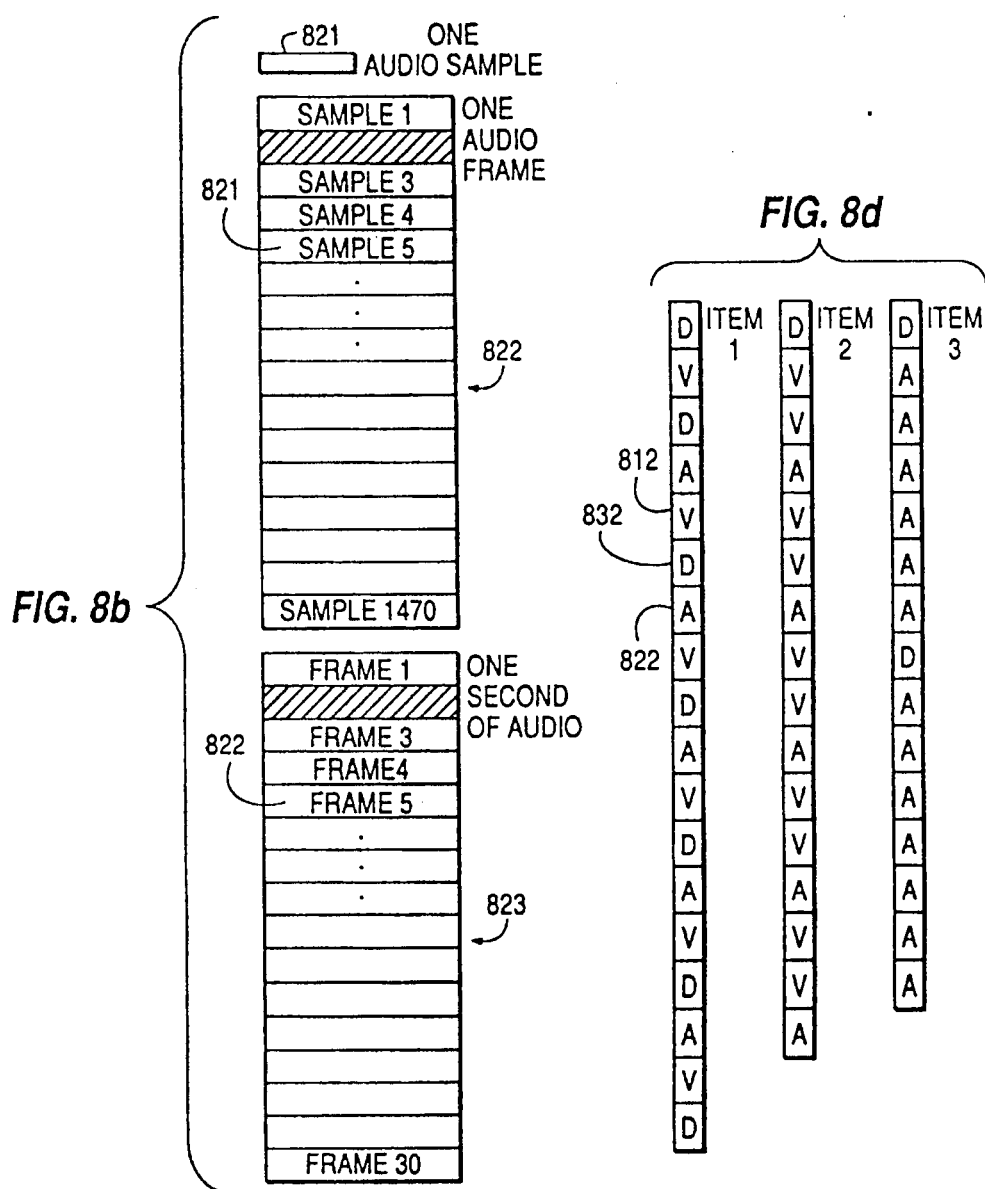
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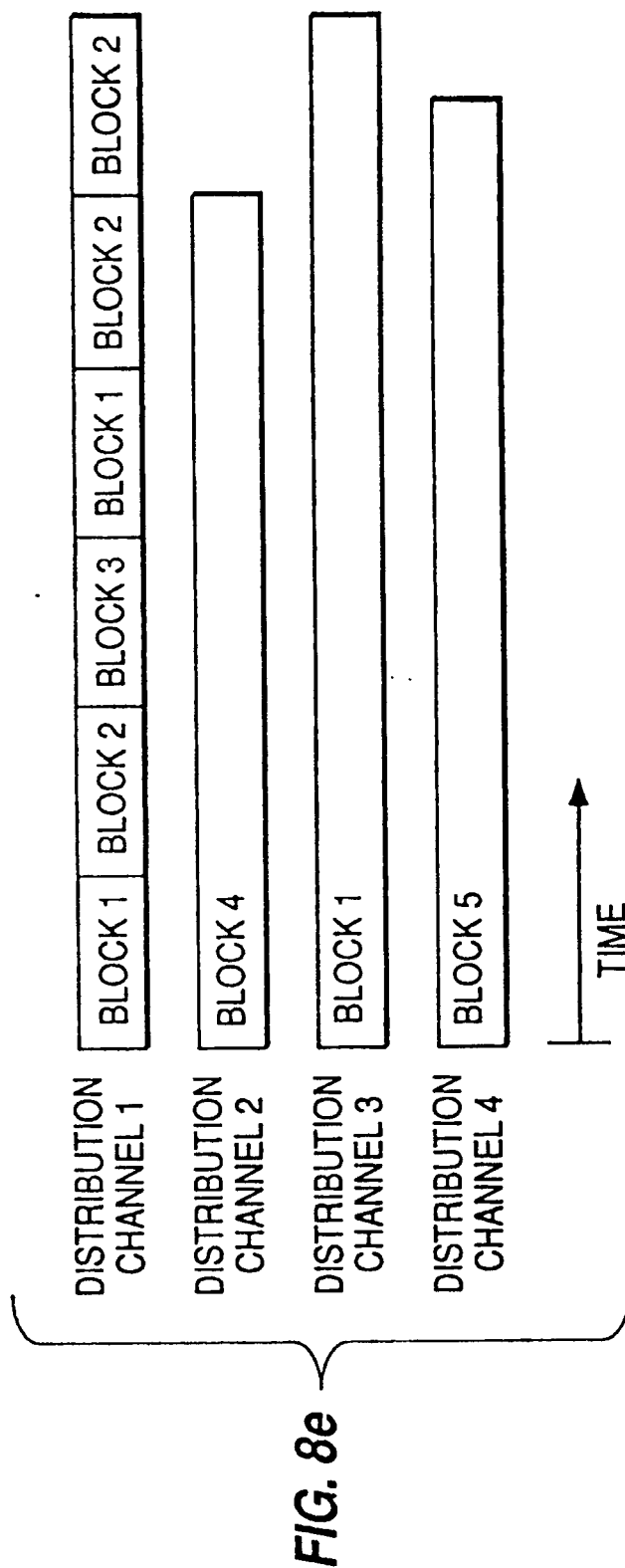


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AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM

BACKGROUND OF THE INVENTION

The present invention relates generally to an audio and video transmission and receiving system, and more specifically to such a system in which the user controls the access and the playback operations of selected material.

At the present time, only a video cassette recorder (VCR) or a laser disk player (LDP) allow a viewer to enjoy control over selection of particular audio/video material. Using either a VCR or an LDP requires the viewer to obtain a video tape either by rental or by purchase. Remote accessing of the material has not yet been integrated into an efficient system.

Several designs have been developed which provide the viewer with more convenient means of accessing material. One such design is disclosed in U.S. Pat. No. 4,506,387, issued to Walter. The Walter patent discloses a fully dedicated, multi-conductor, optical cable system that is wired to the viewer's premises. While the system affords the viewer some control over accessing the material, it requires that a location designated by the viewer be wired with a dedicated cable. The Walter system further requires the viewer be at that location for both ordering and viewing the audio/video material.

U.S. Pat. No. 4,890,320, issued to Monslow, describes a system which broadcasts viewer selected material to a viewer at a prescribed time. This system is limited in that it requires multiple viewers in multiple locations to view the audio/video material at the time it is broadcast, rather than allowing each viewer to choose his or her own viewing time. The system disclosed in Monslow also does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,590,516, issued to Abraham, discloses a system that uses a dedicated signal path, rather than multiple common carriers, to transmit audio/video programming. The receiver has no storage capability. The system provides for only display functions, which limits viewing to the time at which the material is ordered. Like Monslow, the Abraham system does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,963,995, issued to Lang, discloses an audio/video transceiver with the capability of editing and/or copying from one video tape to another using only a single tape deck. Lang does not disclose a system with one or more libraries wherein a plurality of system subscribers may access information stored in the film and tape library or libraries, and play back the selected information at a time and place selected by the subscriber.

It is therefore an object of the present invention to provide a user with the capability of accessing audio/video material by integrating both accessing and playback controls into a system that can use multiple existing communications channels.

It is a further object of the present invention to provide a picture and sound transmission system which allows the user to remotely select audio/video material from any location that has either telephone service or a computer.

A still further object of the present invention is to provide a picture and sound transmission system

wherein the selected audio/video material is sent over any one of several existing communication channels in a fraction of real time to any location chosen by the user that has a specified receiver.

Another object of the present invention is to provide a picture and sound transmission system wherein the user may play back the selected audio/video material at any time selected by the user and retain a copy of the audio/video material for multiple playbacks in the future.

Another object of the present invention is to provide a picture and sound transmission system wherein the information requested by the user may be sent as only audio information, only video information, or as a combination of audio and video information.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

SUMMARY OF THE INVENTION

To achieve the objects in accordance with the purposes of the present invention, as embodied and described herein, the transmission and receiving system for providing information to remote locations comprises source material library means prior to identification and compression; identification encoding means for retrieving the information for the items from the source material library means and for assigning a unique identification code to the retrieved information; conversion means, coupled to identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks; compression means, coupled to the ordering means, for compressing the formatted and sequenced data; compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data received from the compression means with the unique identification code assigned by the identification encoding means; and transmitter means, coupled to the compressed data storing means, for sending at least a portion of a specific file to a specific one of the remote locations.

The present invention further comprises a distribution method responsive to requests identifying information to be sent from a transmission system to a remote location, the method comprising the steps of storing audio and video information in a compressed data form; requesting transmission, by a user, of at least a part of the stored compressed information to the remote location; sending at least a portion of the stored compressed information to the remote location; receiving the sent information at the remote location; buffering the processed information at the remote location; and playing back the buffered information in real time at a time requested by the user.

Additionally, the present invention comprises a receiving system responsive to a user input identifying a choice of an item stored in a source material library to be played back to the subscriber at a location remote from the source material library, the item containing information to be sent from a transmitter to the receiving system, and wherein the receiving system comprises

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transceiver means for automatically receiving the requested information from the transmitter as compressed formatted data blocks; receiver format conversion means, coupled to the transceiver means, for converting the compressed formatted data blocks into a format suitable for storage and processing resulting in playback in real time; storage means, coupled to the receiver format conversion means, for holding the compressed formatted data; decompressing means, coupled to the receiver format conversion means, for decompressing the compressed formatted information; and output data conversion means, coupled to the decompressing means, for playing back the decompressed information in real time at a time specified by the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate the presently preferred apparatus and method of the invention and, together with the general description given above and the detailed description of the preferred embodiment given below serve to explain the principles of the invention. In the drawings:

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention;

FIGS. 2a and 2b are detailed block diagrams of preferred implementations of the transmission system of the present invention;

FIG. 3 is a flowchart of a preferred method of ordering a selection from a library in accordance with the present invention;

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention;

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention;

FIG. 6 is a block diagram of a preferred implementation of the receiving system of the present invention;

FIG. 7 is a flowchart of a preferred method of distribution of the present invention; and

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention. FIGS. 1a, 1b, 1d, 1e, 1f, and 1g each show transmission system 100, described in more detail below with respect to FIGS. 2a and 2b. A user of the transmission and receiving system of the present invention preferably accesses transmission system 100 by calling a phone number or by typing commands into a computer. The user then chooses audio and/or video material from a list of available items which he or she wants to listen to and/or watch.

As shown in FIG. 1a, the transmission and receiving system may preferably comprise a peer to peer configuration where one transmission system 100 communicates with one reception system 200. As shown in FIG. 1b, the transmission and receiving system of the present invention may alternatively comprise a plurality of reception systems 200, 200', 200'', and 200''', which are each associated with a single transmission system 100.

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FIG. 1c shows a high level block diagram of the transmission and receiving system of the present invention including remote order processing and item database 300, described in more detail with respect to FIG. 3. Remote order processing and item database 300 preferably enables users to access desired items by remote communication. The remote order processing and item database 300 may communicate with a plurality of transmission systems 100, 100', 100'', and 100''', each of which communicates with a respective set of reception systems 200, 200', 200'', and 200'''. Each of the reception systems in sets 200, 200', 200'', and 200''' may preferably communicate with a plurality of users.

FIG. 1d shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of users via a reception system 200 configured as a cable television system.

FIG. 1e shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of reception systems 200 and 200'. In the configuration shown in FIG. 1e, reception system 200 is a direct connection system wherein a user is directly connected to transmission system 100. Reception system 200' preferably includes a first cable television system 200a and a second cable television system 200b. Users of cable television systems 200a and 200b are indirectly connected to transmission system 100.

FIG. 1f shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing via several channels to reception systems 200 and 200'. Reception system 200 is preferably non-buffering. In such a system, users are directly connected to transmission system 100, as in reception system 200 in FIG. 1e.

Reception system 200' shown in FIG. 1f is a cable television system, as shown in reception systems 200' of FIG. 1e. In FIG. 1f, the reception system 200' is preferably buffering, which means that users may receive requested material at a delayed time. The material is buffered in intermediate storage device 200c in reception system 200'.

In the configuration of FIG. 1f, decompression of the requested material may preferably occur at the head end of a cable television reception system 200'. Thus, distribution may be provided to users via standard television encoding methods downstream of the head end of the cable distribution system. This method is preferred for users who only have cable television decoders and standard television receivers.

FIG. 1g shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing to a reception system 200, which then preferably transmits requested material over airwave communication channels 200d, to a plurality of users. The transmission and receiving system shown in FIG. 1g may preferably transmit either compressed or uncompressed data, depending on the requirements and existing equipment of the user. The airwave transmission and receiving system shown in FIG. 1g may preferably employ either VHF, UHF or satellite broadcasting systems.

With respect to the transmission and receiving systems set forth in FIGS. 1a-1g, the requested material may be fully compressed and encoded, partly decompressed at some stage in transmission system 100, or fully decompressed prior to transmission. The reception systems

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200 may either buffer the requested material for later viewing, or decompress in real time the requested material as it is distributed by transmission system 100. Alternatively, the reception systems 200 of the present invention may perform a combination of buffering and non-buffering by buffering some of the requested material and decompressing the remainder of the requested material for immediate viewing as it is distributed by transmission system 100.

In direct connection configurations, such as reception systems 200 shown in FIGS. 1e and 1f, the user preferably selects the reception system 200 to which the requested material is sent, and optionally selects the time playback of the requested material as desired. Accordingly, the user may remotely access the transmission system 100 from a location different than the location of reception system 200 where the material will be sent and/or played back. Thus, for example, a user may preferably call transmission system 100 from work and have a movie sent to their house to be played back after dinner or at any later time of their choosing.

In non-direct connection reception systems such as shown in reception system 200' of FIG. 1f, intermediate storage device 200c may preferably include, for example, sixteen hours of random access internal audio and video storage. A reception system with such storage is capable of storing several requested items for future playback. The user could then view and/or record a copy of the decompressed requested material in real time, or compressed in non-real time, at a time of their choosing. Accordingly, the user would not have to make a trip to the store to purchase or rent the requested material.

In any of the transmission and receiving systems illustrated in FIGS. 1a-1g, the requested material may be copy protected. To achieve copy protection, the requested material, as an item, is encoded as copy protected during storage encoding in transmission system 100. The user may then play back the item only one time. The user may also optionally review select portions of the item prior to its automatic erasure from the memory of the reception system 200. In this way, requested material may be distributed to "view only" users and also to "view and copy" users who wish to retain copies of the distributed items.

Copy protected programs, when decompressed and played back, would have a copy protection technique applied to the analog and digital output signals. The analog video output is protected from copying through the use of irregular sync signals, which makes the signal viewable on a standard television but not recordable on an audio/video recorder. Digital output protection is effected through copy protect bit settings in the digital output signal, thus preventing a compatible digital recorder from recording the digital audio and/or video signal stream. A protected item will not be passed to the compressed data port of the digital recorder for off line storage.

FIGS. 2a and 2b illustrate detailed block diagrams of preferred implementations of the transmission system 100 of the present invention. Transmission system 100 may either be located in one facility or may be spread over a plurality of facilities. A preferred embodiment of transmission system 100 may preferably include only some of the elements shown in FIGS. 2a and 2b.

Transmission system 100 of a preferred embodiment of the present invention preferably includes source material library means for temporary storage of items prior

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to conversion and storage in a compressed data library means. The items of information may include analog and digital audio and video information as well as physical objects such as books and records which require conversion to a compatible media type before converting, compressing and storing their audio and video data in the compressed data library means.

As shown in FIG. 2a, the source material library means included in transmission system 100 preferably includes a source material library 111. The source material library 111 may include different types of materials including television programs, movies, audio recordings, still pictures, files, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects. These materials are converted to or recorded on a media format compatible to the digital and analog inputs of the system prior to being compressed and stored in a compressed data library 118. The different media formats preferably include digital or analog audio and video tapes, laser disks, film images, optical disks, magnetic disks, computer tapes, disks and, cartridges.

The source material library 111, according to a preferred embodiment of the present invention, may preferably include a single source material library or a plurality of source material libraries. If there are a plurality of source material libraries, they may be geographically located close together or may be located far apart. The plurality of source material libraries may communicate using methods and channels similar to the methods and channel types which libraries may employ for communication with the receiving system 200 of the user, or the source material libraries may communicate via any available method.

Prior to being made accessible to a user of the transmission and receiving system of the present invention, the item must be stored in at least one compressed data library 118, and given a unique identification code by identification encoder 112. Storage encoding, performed by identification encoder 112, aside from giving the item a unique identification code, optionally involves logging details about the item, called program notes, and assigning the item a popularity code. Storage encoding may be performed just prior to conversion of the item for transmission to reception system 200, at any time after starting the conversion process, or after storing the item in the compressed data library 118.

In a preferred embodiment of the present invention, the method of encoding the information involves assigning a unique identification code and a file address to the item, assigning a popularity code, and inputting the program notes. This process is identical for any of the different media types stored in the source material library 111.

The transmission system 100 of the present invention also preferably includes conversion means 113 for placing the items from source material library 111 into a predetermined format as formatted data. In the preferred embodiment, after identification encoding is performed by identification encoder 112, the retrieved information is placed into a predetermined format as formatted data by the converter 113. The items stored in source material library 111 and encoded by identification encoder 112 may be in either analog or digital form. Converter 113 therefore includes analog input receiver 127 and digital input receiver 124. If items have only one format, only one type of input receiver 124 or 127 is necessary.

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When the information from identification encoder 112 is digital, the digital signal is input to the digital input receiver 124 where it is converted to a proper voltage. A formatter 125 sets the correct bit rates and encodes into least significant bit (lsb) first pulse code modulated (pcm) data. Formatter 125 includes digital audio formatter 125a and digital video formatter 125b. The digital audio information is input into a digital audio formatter 125a and the digital video information, if any, is input into digital video formatter 125b. Formatter 125 outputs the data in a predetermined format.

When the retrieved information from identification encoder 112 is analog, the information is input to an analog-to-digital converter 123 to convert the analog data of the retrieved information into a series of digital data bytes. Converter 123 preferably forms the digital data bytes into the same format as the output of formatter 125.

Converter preferably includes an analog audio converter 123a and an analog video converter 123b. The analog audio converter 123a preferably converts the retrieved audio signal into pcm data samples at a fixed sampling rate. The analog video converter 123b preferably converts the analog video information, retrieved from identification encoder 123, into pcm data also at fixed sampling rates.

If the retrieved information being converted contains only audio information, then the audio signal is fed to the appropriate digital audio input or analog input. When the retrieved information contains both audio and video information, the audio and video signals are passed simultaneously to the audio and video converter inputs. Synchronization between the audio and video data can be maintained in this way.

If, for example, the retrieved information to be converted from the source material library 111 is a motion picture film, the picture frames in the film are passed through a digital telecine device to the digital input receiver 124. Format conversion is then preferably performed by digital video formatter 125b. Accompanying audio information is passed through an optical or magnetic digital playback device. This device is connected to digital audio formatter 125a.

In some cases, such as in inter-library transfers, incoming materials may be in a previously compressed form so that there is no need to perform compression by precompression processor 115 and compressors 128 and 129. In such a case, retrieved items are passed directly from identification encoder 112 to the compressed data formatter 117. The item database records, such as the program notes which may also be input from another system, to the compressed data formatting section 117, where this data, if necessary, is reformatted to make it compatible with the material stored in compressed data library 118. Such material may be received in the form of digital tapes or via existing communication channels and may preferably input directly to a short term storage 117' in the compressed data formatting section 117.

The transmission system 100 of the present invention also preferably includes ordering means for placing the formatted information into a sequence of addressable data blocks. As shown in FIG. 2a, the ordering means in the preferred embodiment includes time encoder 114. After the retrieved information is converted and formatted by the converter 113, the information may be time encoded by the time encoder 114. Time encoder 114 places the blocks of converted formatted information from converter 113 into a group of addressable

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blocks. The preferred addressing scheme employs time encoding. Time encoding allows realignment of the audio and video information in the compressed data formatting section 117 after separate audio and video compression processing by precompression processor 115 and compressor 116.

The converted formatted information of the requested material is then preferably in the form of a series of digital data bytes which represent frames of video data and samples of the audio data. A preferred relationship of the audio and video bytes to each other is shown in FIG. 8. Incoming signals are input and converted in sequence, starting with the first and ending with the last frame of the video data, and starting with the first and ending with the last sample of the audio data. Time encoding by time encoder 114 is achieved by assigning relative time markers to the audio and video data as it passes from the converter 113 through the time encoder 114 to the precompression processor 115. Realignment of audio and video data, system addressing of particular data bytes, and user addressing of particular portions of items are all made possible through time encoding.

Through the use of the address of an item and its frame number it is possible to address any particular block of audio or video data desired. From here, further addressing down to the individual byte is possible. Frames and groups of frames may preferably be further broken down, as necessary to the individual bytes and bits, as required for certain processing within the system.

User and system addressing requirements dictate the level of granularity available to any particular section of the system. Users are able to move through data in various modes, thus moving through frame addresses at various rates. For example, a user may desire to listen to a particular song. They may preferably enter the song number either when requesting the item from the compressed data library 118 and only have that song sent to their receiving system 200 or they may preferably select that particular song from the items buffered in their receiving system 200. Internal to the system, the song is associated with a starting frame number, which was indexed by the system operator via the storage encoding process. The system item database may contain information records for individual frames or groups of frames. These can represent still frames, chapters, songs, book pages, etc. The frames are a subset of, and are contained within, the items stored in the compressed data library 118. Time encoding by time encoder 114 makes items and subsets of items retrieveable and addressable throughout the transmission system 100. Time encoding enables subsequent compression of the information to be improved because data reduction processes may be performed in the time dimension. This is described in greater detail below.

The transmission system 100 of the present invention also preferably includes data compression means for compressing the formatted and sequenced data. The sequence of addressable data blocks which was time encoded and output by time encoder 114 is preferably sent to precompression processor 115. The data arriving from time encoder 114 may be at various frame rates and of various formats. Precompression processor 115 preferably includes audio precompressor 115a and video precompressor 115b.

Video precompression processor 115b buffers incoming video data and converts the aspect ratio and frame

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rate of the data, as required by compression processor 116. The frame buffer 131 of video precompression processor 115b holds all incoming data until the data is compressed by the data compressor 116. The incoming video data is processed for sample rate optimization, aspect ratio fitting and buffered in buffer 130 for compression processing by the video precompression processor 115b.

Video precompression processor 115b processes the incoming video data so that it fits into the aspect ratio of the transmission and receiving system of the present invention. When incoming material with a different aspect ratio than the aspect ratio of the system is selected, a chosen background is preferably placed around the inactive region of the video information. In this way, no data is lost to differences in the aspect ratio between incoming material, and the converted and compressed data stored in transmission system 100. Images resulting from a different aspect ratio may have an inactive region where background information is contained, or may be converted into a best fit arrangement. Output from the video precompression processor 115b is stored in the frame buffer 131, which is dual ported and is directly addressable by video compressor 129.

The incoming audio data is processed for sample rate and word length optimization and is then buffered in buffer 130 for compression processing by the audio precompression processor 115a. Audio precompression processor 115a may preferably transcode incoming audio information, as required, to create the optimum sample rate and word lengths for compression processing. The output of the audio precompression processor 115a is a constant sample rate signal of a fixed word length which is buffered in frame buffer 130. The frame buffer 130 is dual ported and is directly addressable by audio compressor 128. Blocking the audio data into frames at audio precompression processor 115a makes it possible to work with the audio data as addressable packets of information.

Once precompression processing is finished, the frames are compressed by the data compressor 116. Compressor 116 preferably comprises an audio data compressor 128 and a video data compressor 129. The benefits of data compression performed by data compressor 116 are shortened transmission time, faster access time, greater storage capacity, and smaller storage space requirements. Compression processing performed by compressors 128 and 129 requires multiple samples of data to perform optimum compression. Audio and video information is preferably converted into blocks of data organized in groups for compression processing by audio compressor 128 and video compressor 129, respectively. These blocks are organized as frames, and a number of frames are contained respectively in the buffers 130 and 131. By analyzing a series of frames it is possible to optimize the compression process.

Audio data is preferably compressed by audio compressor 128 by application of an adaptive differential pulse code modulation (ADPCM) process to the audio data. This compression process, which may be implemented by the apt-x 100 digital audio compression system, is manufactured by Audio Processing Technology (APT). Audio compression ratios of 8X or greater are achieved with the APT system.

Compression by compressor 116 may be performed on a group of 24 video frames may preferably be passed in sequence to the frame buffer 130 of the video pre-

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compression processor 115b where they are analyzed by video compressor 129 which performs data reduction processing on the video data. Video compression is preferably performed by video compressor 129. Video compression is achieved by the use of processors running algorithms designed to provide the greatest amount of data compression possible. Video data compression preferably involves applying two processes: a discrete cosine transform, and motion compensation. This process is described in "A Chip Set Core of Image Compression", by Artieri and Colavin. Multiple frames of video data may preferably be analyzed for patterns in the horizontal (H), vertical (V), diagonal (zigzag) and time (Z) axis. By finding repetition in the video data, redundancy may be removed and the video data may be compressed with a minimal loss of information.

In accordance with a preferred embodiment of the present invention, the transmission system 100 may further comprise compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data with the unique identification code received from the data compression means. After compression processing by compressor 116, the compressed audio and video data is preferably formatted and placed into a single file by the compressed data storage means 117. The file may contain the compressed audio and/or video data, time markers, and the program notes. The file is addressable through the unique identification code assigned to the data by the identification encoder 112.

Further, according to the present invention, the transmission system preferably includes compressed data library means for separately storing composite formatted data blocks for each of the files. The compressed data storage means preferably includes compressed data library 118, as shown in FIG. 2b. After the data is processed into a file by the compressed data storage means 117, it is preferably stored in a compressed data library 118. In a preferred embodiment, compressed data library 118 is a network of mass storage devices connected together via a high speed network. Access to any of the files stored in compressed data library 118 is available from multiple reception systems 200 connected to the transmission and receiving system.

Stored items are preferably accessed in compressed data library 118 through a unique address code. The unique address code is a file address for uniquely identifying the compressed data items stored in the compressed data library section of a library system. This file address, combined with the frame number, and the library system address allow for complete addressability of all items stored in one or more compressed data libraries 118. Compressed data library addresses along with receiving system addresses are used to form a completely unique address for distribution system control.

The unique address code is an address assigned to the item by the system operator during storage encoding, which is preferably done prior to long term storage in the compressed data library 118. In a preferred embodiment, the unique address code is used for requesting and accessing information and items throughout the transmission and receiving system. The unique address code makes access to the requested data possible.

The storage encoding process performed by encoder 112 also allows entry of item notes and production credits. Production credits may include the title, names of

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the creators of the item such as the producer, director, actors, etc. Other details regarding the item which may be of interest and which may make the items more accessible are kept in an item database.

Item addresses are mapped to item names by identification encoder 112 and may preferably be used as an alternative method of accessing items. The item names are easier to remember, thus making user access more intuitive by using item names. The storage encoding entry process performed in identification encoder 112 operates a program which updates a master item database containing facts regarding items in the compressed data library system. The storage encoding process may be run by the system operator whereby the system operator accesses the master item database to track and describe items stored in one or more compressed data libraries. The names and other facts in the item database may preferably be updated at any time via the storage encoding process. Changes made to the master item database may be periodically sent to the remote order processing and item database 300.

As described in more detail later, a user may preferably access an item via its unique identification code, via its title, or the user may use other known facts for accessing an item. The user may access items in the compressed data library 118 directly using the unique address code or the user may obtain access via the remote order processing and item database 300. Indirect access via the remote order processing and item database 300 is possible using, for example, a synthesized voice system, a query type of computer program interface, or customer assistance operators. In addition to providing interactive access to the remote order processing and item database 300, a catalog listing some or all available titles may also preferably be published. With a published catalog, users may obtain the unique address code for an item very easily thereby allowing for retrieval from the compressed data library 118 without any help from an interactive system.

To achieve user access via an interactive system, facts about the items may be kept in files as a part of the items or the facts may be kept separately, for example, by systems which only to inform users of the available items and take orders. For example, in systems which have portions split in separate locations, the facts about the items may be separated from the items themselves and stored in separate files. A system of this type can distribute user orders to other portions of the transmission and receiving system for ultimate distribution to the requesting user. Further, to support a plurality of users, multiple versions of the item database may preferably reside either on multiple database servers, in catalogs, or on other computer systems.

The item database master may reside in the system control computer 1123 where may be is updated and kept current to the contents of the compressed data library 118. The data stored in the item database master may be accessed by users via application programs, running on the system control computer 1123, and on the reception system 200 of the user. Users may connect to the item database via any available telecommunication channels. Copies of the item database master may be updated and informed of new entries into compressed data library 118 at periodic intervals determined by the system manager.

Other copies of the item database master may also be made available to users from the remote order processing and item database 300 which batch processes and

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downloads user requests to the control computer 1123 of the compressed data library 118 via standard telecommunications or high speed communication channels. Moreover, multiple remote order processing and item database 300 sites make it possible for more locations to process orders than there are library facilities, and thus make order processing more efficient.

Preferably, access of a requested item via the remote order processing and item database 300 operates as follows. If the user does not know the title of the desired item, he or she may request the item by naming other unique facts related to the item. For example, a user would be able to access an item about Tibetan Medicine by asking for all items which include information about "Tibet" and include information about "Medicine." The remote order processing and item database 300 would then be searched for all records matching this request. If there is more than one item with a match, each of the names of the matching items are preferably indicated to the user. The user then selects the item or items that he or she desires. Upon selection and confirmation, by the user, a request for transmission of a particular item or items is sent to the distribution manager program of the system control computer 1123. The request contains the address of the user, the address of the item, and optionally includes specific frame numbers, and a desired viewing time of the item.

The storage encoding process performed by identification encoder 112 also allows entry of a popularity code. The popularity code is preferably assigned on the basis of how often the corresponding item is expected to be requested from the compressed data library 118. This popularity code can be used to determine the most appropriate form of media for storage of the compressed data in a mixed media system. Mixed media systems are preferably employed as more cost effective storage in very large compressed data libraries 118. Once assigned, the popularity code may be dynamically updated, by factoring item usage against system usage. Thus, stored items are dynamically moved to the most appropriate media over their life in the compressed data library 118. If a particular item stored in compressed data library 118 is retrieved frequently by users, storage in compressed data library 118 is preferably on higher speed, more reliable, and probably more expensive media. Such media includes Winchester and magneto-optical disks.

If an item stored in compressed data library 118 is retrieved less frequently, it may be stored in the compressed data library 118 on a digital cassette tape. Examples of such cassette tapes are a Honeywell RSS-600 (Honeywell Inc. Minneapolis, Minn.), Summus Juke-BoxFilm and tape library (Summus Computer Systems, Houston, Tex. 800-255-9638), or equivalent cassette tapes. All items stored in the compressed data library 118 are on line and are connected to the high speed network. Thus, they may be readily accessed.

Instead of using a remote order processing and item database 300, the compressed data library 118 may include the program notes which were input by the system operator. The program notes may preferably include the title of the item stored in the compressed data library 118, chapter or song titles, running times, credits, the producer of the item, acting and production credits, etc. The program notes of an item stored in the compressed data library 118 may be thus contained within the compressed data file formed in the compressed data formatter 117.

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In some cases, where multiple compressed data libraries 118 are organized, the popularity code may dictate distribution of a particular item to multiple distribution systems. In such cases, a copy of the compressed data is sent to another library and the other library can then distribute the compressed data to users concurrently with the original compressed data library 118.

The compressed data library 118 is composed of a network of storage devices connected through a High Performance Parallel Interface (HPPI) Super Controller (available from Maximum Strategy Inc., San Jose, Calif.). Therefore, multiple communication controllers may preferably access the large quantity of data stored in compressed data library 118 at very high speeds for transfer to a reception system 200 of a user upon request. For more details on this configuration see Ohrenstein, "Supercomputers Seek High Throughput and Expandable Storage", Computer Technology Review, pp. 33-39 April 1990.

The use of an HPPI controller allows file placement onto multiple mass storage devices of the compressed data library 118 with a minimum of overhead. Database management software controls the location and tracking of the compressed data library 118 which can be located across multiple clusters of file servers connected together by one or more high speed networks over multiple systems.

The transmission system 100 of the present invention may also preferably include library access/interface means for receiving transmission requests to transmit items and for retrieving formatted data blocks stored in the compressed data library 118 corresponding to the requests from users. The compressed audio and/or video data blocks, along with any of the information about the item stored in the compressed data library 118 may be accessed via library access interface 121. The library access interface 121 receives transmission requests either directly from the users or indirectly by remote order processing and item database 300. The transmission format means 119 receives the request and retrieves the composite formatted data block of the requested item stored in compressed data library 118 and converts the compressed formatted data block into a format suitable for transmission. The requested item is then sent to the user via the transmitter 122 or directly via interface 121.

In a preferred embodiment of the present invention, customer access of an item stored in compressed data library 118 via the library access interface 121 may be performed in various ways. The methods of requesting a stored item are analogous to making an airline reservation or transferring funds between bank accounts. Just as there are different methods available for these processes it is desirable to have several ordering methods available to the users of the system of the present invention. For example, telephone tone decoders and voice response hardware may be employed. Additionally, operator assisted service or user terminal interfaces may be used.

Customer access via telephone tone decoders and voice response hardware is completely electronic and may preferably be performed between a system user and a computer order entry system. The user may obtain help in ordering an item from a computer synthesized voice. With such an access method, the user will normally be accessing a dynamic catalog to assist them. Confirmation of selections and pricing information may

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preferably be given to the user prior to completion of the transaction.

This process of access, performed by remote order processing and item database configuration 300, shown in FIG. 1c, preferably includes the following steps, shown in flowchart 3000 of FIG. 3. First, the user calls the system access number (step 3010). Upon successfully dialing the system access number, the user receives instructions from the system (step 3020). The instructions may preferably include steps the user must take in order to place an order. Preferably, the instructions may be bypassed by the experienced user who knows how to place an order.

The user then enters a customer ID code by which the system accesses the user's account, and indicates to the system that the user is a subscriber of the system (step 3030). In response to the user entering his ID code in step 3030 the system confirms whether the user is in good standing (step 3040). If the user is in good standing, the system queues the user to input his request (step 3050).

The user request may preferably be made from a catalog sent to each of the subscribers of the system. The user will preferably identify his choice and enter the corresponding identification code of the item (step 3060). The system then preferably confirms the selection that the user has made and informs the user of the price of the selection (step 3070).

The user then indicates whether the confirmation performed in step 3070 is correct (step 3080). If the confirmation performed in step 3070 is correct, the user so indicates and then inputs a desired delivery time and delivery location (step 3090).

If the confirmation performed in step 3070 does not result in the selection desired by the user, the user re-inputs the item identification code in step 3060 and the confirmation steps 3070 and 3080 are repeated. Therefore, proper selection of the selected item is insured. Once there is confirmation, the user enters the playback time and destination in step 3090.

The user then preferably confirms that the order is correct (step 3100). The confirmation performed in step 3100 includes confirmation of the entire transaction including the selected item, the selected time of playback, and the location of playback. The transaction is then completed and the request is placed on a transmission queue at the appropriate compressed data library 118 (step 3110).

Access by the users via operator assisted service includes telephone operators who answer calls from the users. The operators can sign up new customers, take orders, and help with any billing problems. The operators will preferably have computer terminals which give them access to account information and available program information. Operators can also assist a user who does not know a title by looking up information stored in files which may contain the program notes, as described above. Once the chosen program is identified, the operator informs the user of the price. After the user confirms the order, the user indicates the desired delivery time and destination. The operator then enters the user request into the system. The request is placed in the transmission queue.

Access by a user terminal interface method provides the user with access from various terminals including personal computers, and specialized interfaces built into the reception system 200 for the user. Such access allows a user to do a search of available programs from a

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computer screen. This process involves the steps 4000 shown in FIG. 4.

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention. In the preferred method of FIG. 4, the user first logs onto the user terminal interface (step 4010). After the user logs on, the user may preferably select a desired item by searching the database of available titles in the library system control computer 1123 or any remote order processing and item database 300 (step 4020). The search may preferably be performed using the database containing the program notes, described above with respect to FIGS. 2a and 2b. It is possible to process orders and operate a database of available titles at multiple locations remote of the source material library 111. Users and order processing operators may preferably access such remote systems and may place transmission requests from these systems. Orders placed on these systems will be processed and distributed to the appropriate libraries. After the desired item is found, the user selects the item for transmission at a specific time and location (step 4030).

To complete an order, the remote order processing and item database 300 preferably connects to the compressed data library 118 of choice via the library access interface 121 and communicates with the library system control computer 1123. Preferably the user's account ID, identification of the item for transmission and the chosen destination for the item are communicated. Through employment of distributed order processing systems of this type many orders may be processed with minimal library overhead.

All transmission requests from the access methods are placed into a transmission queue managed by the library system control computer 1123. This queue is managed by a program that controls the distribution of the requested items to the reception system 200 of the user. The queue manager program also operates in the system control computer and keeps track of the user ID, the chosen program and price, the user channel type, the number of requests for a given program, the latest delivery time, and the compressed data library media type (for example, high speed or low speed). From this information, the queue manager program makes best use of the available distribution channels and media for efficient transmission and storage of the requested items.

The queue manager program also manages the file transmission process for multiple requests for a single file, stored in the compressed data library 118. During a given time period, the queue manager program will optimize access to the compressed data library 118, wherever possible it will place the data on multiple outputs for simultaneous transmission to more than one requesting user.

The conversion performed by transmission data converter 119 encodes the data for the transmission channel. The transmission data converter transfers the desired segments of data from the compressed data library 118 onto the communication channel which is used to deliver the data to the reception system 200.

The transmission system 100 of the present invention preferably further includes transmitter means 122, coupled to the compressed data library 118, for sending at least a portion of a specific file to at least one remote location. The transmission and receiving system of the present invention preferably operates with any available communication channels. Each channel type is accessed through the use of a communications adaptor board or

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processor connecting the data processed in the transmission format converter 119 to the transmission channel.

A preferred embodiment of the present invention also includes means by which to access users via common access lines. These may include standard telephone, ISDN or B-ISDN, microwave, DBS, cable television systems, MAN, high speed modems, or communication couplers. Metropolitan Area Networks (MANs) which are common carrier or private communication channels are designed to link sites in a region. MANs are described by Morreale and Campbell in "Metropolitan-area networks" (IEEE Spectrum, May 1990 pp. 40-42). The communication lines are used to transmit the compressed data at rates up to, typically, 10 Mb/sec.

In order to serve a multitude of channel types, a preferred embodiment of the present invention includes a multitude of output ports of each type connected to one or more computers on the transmission and receiving system. The management of transmission is then distributed. That is, the computer controlling the transmission queue tells the transmission encoding computer its task and then the task is executed by the transmission encoding computer, independent of the transmission queue computer. The transmission queue computer provides the data for transmission by the file server which also distributes to other transmitters located in the same or other transmission encoding computers.

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention. The queue manager program, in the distribution process, preferably confirms availability of an item from the compressed data library 118 and logically connects the item stored in compressed data library 118 to the communications controller, illustrated in FIG. 2a (step 5010). After availability is confirmed in step 5010, the data awaits transmission by the transmitter 122.

After availability is confirmed in step 5010, the communications controller preferably makes the physical connection to the reception system 200 of the user (step 5020). This is normally done by dialing the receiving device of the user. The reception system 200 preferably answers the incoming call and confirms the connection (step 5030).

Once connected to the reception system 200, in steps 5020 and 5030, the data stored in compressed data library 118 is preferably transferred in data blocks from the compressed data library 118 to the communications controller (step 5040). The data blocks are buffered by the communications controller. The buffered data is sent down the communications channel to the reception system 200 by transmitter 122 (step 5050).

The transmitter 122 places the formatted data onto the communications channel. This is an electrical conversion section and the output depends upon the chosen communication path. The signal is sent to the reception system 200 in either a two way or a one way communication process. In a standard telephone connection, the transmitter 122 is preferably a modem. When using an ISDN channel, the transmitter 122 is preferably a data coupler.

In a preferred embodiment of the present invention, many forms of communication channels may be employed. Distribution of information is by common carrier communication channels whenever possible. These channels include common telephone service, ISDN and Broadband ISDN, DBS, cable television systems, microwave, and MAN.

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In order that reception is performed efficiently, the reception system 200 confirms reception of the initial data block before receiving the remaining data blocks whenever possible (step 5060). After all data blocks have been received and reception is confirmed, the communications controller breaks the physical connection to the reception system 200 (step 5070). Then, confirmation of the transmission is sent to the queue manager (step 5080). Finally, the queue manager updates the list and sends the information to the billing program, which updates the account of the user (step 5090).

When item distribution occurs through a broadcasting method such as a communications satellite, the process is one way, with ongoing reception not being confirmed by the reception system 200. In these situations, some further redundancy is included by transmission formatter 122 with the data blocks for error correction processing to be performed in the reception system 200. In such one way communication situations, the queue manager program running in library system control computer 1123 confirms reception, via telephone line connection for example, to the reception system 200 after distribution. This should occur prior to updating the user's account and the dispatch lists.

The real time output signals are output to a playback system such as an audio amplifier and/or television. This output may also be sent to an audio/video recorder for more permanent storage. Moreover, in the preferred embodiment only non-copy protected data can be recorded on an audio/video recorder. Any material which is copy protected will be scrambled at the video output in a way which makes it viewable on a standard audio/video receiver but does not allow for recording of the material.

The reception system 200 has playback controls similar to the controls available on a standard audio/video recorder. These include: play, fast forward, rewind, stop, pause, and play slow. Since items are preferably stored on random access media, the fast forward and rewinding functions are simulations of the actual events which occur on a standard audio/video recorder. Frames do not tear as on an audio/video recorder, but in fast play modes they go by very quickly.

The library access interface 121 in the reception system 200 preferably includes a title window where a list of available titles are alphabetically listed. This window has two modes: local listing of material contained within the library system control computer 1123, and library listing for all available titles which may be received from the available, remotely accessible libraries. The titles listed in this window are sent from the database on the library system control computer 1123 or the remote order processing and item database 300.

The system may also preferably include dispatching control software which receives input from the remote order processing and item database 300 and sends distribution requests to the distribution systems. In instances where not all items are contained in each of the compressed data libraries 118, the dispatching software will keep a list of the available titles in a particular compressed data library 118. The dispatch software may also preferably coordinate network traffic, source material library 111 utilization, source material library 111 contents, and connection costs. By proper factoring of these variables, efficient use of the available distribution channels may be achieved.

FIG. 6 illustrates a block diagram of a preferred implementation of the reception system 200 according to

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the present invention. The reception system 200 is responsive to user requests for information stored in source material library 111. The reception system 200 includes transceiver 201 which receives the audio and/or video information transmitted by transmitter 122 of the transmission system 100. The transceiver 201 automatically receives the information from the transmitter 122 as compressed formatted data blocks.

The transceiver 201 is preferably connected to receiver format converter 202. The receiver format converter 202 converts the compressed formatted data blocks into a format suitable for playback by the user in real time.

In the reception system 200 of the present invention, the user may want to play back the requested item from the source material library 111 at a time later than when initially requested. If that is the case, the compressed formatted data blocks from receiver format converter 202 are stored in storage 203. Storage 203 allows for temporary storage of the requested item until playback is requested.

When playback is requested, the compressed formatted data blocks are sent to data formatter 204. Data formatter 204 processes the compressed formatted data blocks and distinguishes audio information from video information.

The separated audio and video information are respectively decompressed by audio decompressor 209 and video decompressor 208. The decompressed video data is then sent simultaneously to converter 206 including digital video output converter 211 and analog video output converter 213. The decompressed audio data is sent simultaneously to digital audio output converter 212 and analog audio output converter 214. The outputs from converters 211-214 are produced in real time.

The real time output signals are output to a playback system such as a TV or audio amplifier. They may also be sent to an audio/video recorder of the user. By using the reception system 200 of the present invention, the user may utilize the stop, pause, and multiple viewing functions of the receiving device. Moreover, in a preferred embodiment of the present invention, the output format converters may be connected to a recorder which enables the user to record the requested item for future multiple playbacks.

FIG. 7 is a flow chart 400 of a preferred method of distribution of the present invention. The distribution method is preferably responsive to requests identifying information to be sent from the transmission system 100 to remote locations. Method 400 assumes that the items have already been stored in compressed data library 118.

As illustrated in FIG. 7, the first step of the distribution method 400 involves retrieving the information for selected items in the source material library 111, upon a request by a user of the distribution system (step 412). This is analogous to taking books off of a shelf at the local public library after the person has decided that he or she would like to read them.

After the information for the selected items is retrieved in step 412, the distribution method 400 of the present invention further comprises the step of processing the information for efficient transfer (step 413). The processing performed in step 413 preferably includes assigning a unique identification code to the retrieved information performed by identification encoder 112 shown and described with respect to FIG. 2a (step 413a). The processing also preferably includes placing

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the retrieved information into a predetermined format as formatted data by converter 113 (step 413b), and placing the formatted data into a sequence of addressable data blocks by ordering means 114 (step 413c).

Processing step 413 also includes compressing the formatted and sequenced data performed by data compressor 116 (step 413d), and storing as a file the compressed sequenced data received from the data compression means with the unique identification assigned by the identification encoding means (step 413e).

After the information is processed for efficient transfer, in substeps 413a-e of step 413, the distribution method 400 of the present invention preferably includes the step of storing the processed information is stored in a compressed data library (step 414). Preferably, the compressed data library is analogous to compressed data library 118, described with respect to FIG. 2a.

After the information is stored in a compressed data library 118, the transmission and receiving system preferably waits to receive a transmission request (step 415). Upon receiving a transmission request, from transmission system 100, the compressed formatted data is preferably converted for output to a reception system 200, selected by the user. The information is preferably transmitted over an existing communication channel to a reception system 200, and is received by that system (step 417). When the information is received in step 417, it is preferably formatted for the particular type of reception system 200 to which the information is sent.

The received information is preferably buffered (step 418) by a storage means analogous to element 203 shown in FIG. 3. The information is preferably buffered so that it may be stored by the user for possible future viewings. The requested information is then played back to the reception system 200 of the user at the time requested by the user (step 419).

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system. FIG. 8a shows the block structure of video data where a video frame 812 is composed of a plurality of video samples 811, and a second of video 813 is composed of a plurality of video frames 812.

FIG. 8b shows the block structure of audio data where an audio data frame 822 is composed of a plurality of audio sample 821, and a second of audio 823 is composed of a plurality of audio data frames 822. FIG. 8c shows the block structure of a data frame 832 composed of a plurality of data bytes 831. The combination of the audio frames 812, video frames 822, and data frames 832 comprise the elements of a single item. FIG. 8d shows a block representation of for three illustrative items which may be stored in the source material library 111. Each of items 1-3 contains its own arrangement of video frames 812, audio frames 822, and data frames 832.

FIG. 8e shows methods of distribution to reception systems 200 with both multiplexed and non-multiplexed signal paths, both addressed and non-addressed blocks of items. A block of an item may be an entire item or, alternatively, may be only a portion of an item, as selected by a user. Further, the blocks may be composed of either compressed, partially compressed, or fully decompressed data, as required by the configuration of the reception system 200.

As shown in FIG. 8e, the same block, for example, block 1, may be simultaneously transmitted over different distribution channels. The blocks when transmitted

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over one of the distribution channels may have receiver addresses appended to the blocks or the reception system 200 may have been preconfigured to receive the blocks comprising data frames for particular items from the active distribution channel.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with the true scope and spirit of the invention being indicated by the following claims.

What is claimed is:

1. A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:

library means for storing items containing information; identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;

compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;

compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and

transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to one of the remote locations.

2. A transmission system as recited in claim 1, wherein the transmitter means includes:

transmission format means for placing the compressed, sequenced data blocks onto a communication path.

3. A transmission system as recited in claim 1, wherein the information in the items includes analog signals, and wherein the conversion means further comprises:

converting means, coupled to the identification encoding means, for A/D converting the analog signals of the information into a series of digital bytes; and

formatting means, coupled to the converting means, for converting the series of digital data bytes into formatted data with a predetermined format.

4. A transmission system as recited in claim 1, wherein the information in the items includes digital signals, and wherein the conversion means further comprises:

digital input receiver means, coupled to the identification encoding means, for converting the digital signals of the information into predetermined voltage levels; and

formatting means, coupled to the digital input receiver means, for converting the predetermined voltage levels into formatted data with a predetermined format.

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5. A transmission system as recited in claim 3, wherein the information in the items includes digital signals, and wherein the conversion means further comprises:

digital input receiver means, coupled to the identification encoding means, for converting the digital signals of the information into predetermined voltage levels; and

voltage levels adjusting means, coupled to the digital input receiver means, for converting the predetermined voltage levels into formatted data with the predetermined format.

6. A transmission system as recited in claim 2, wherein the compressed data storing means further comprises:

compressed data library means for separately storing a plurality of files, each including at least one compressed, sequenced data block.

7. A transmission system as recited in claim 6, further comprising:

system control interface means, coupled to the transmission format means, for generating a listing of available items; and p1 library access interface means, coupled to the transmission format means, for receiving transmission requests to transmit items, and for retrieving formatted data blocks stored in the compressed data library means corresponding to the requests from subscribers.

8. A transmission system as recited in claim 1, further comprising:

precompression data processing means, coupled to the ordering means, for storing the formatted data blocks.

9. A transmission system as recited in claim 1, wherein the information in the items includes analog audio information, and wherein the conversion means further comprises:

audio converting means, coupled to the identification encoding means, for converting the analog audio signals into streams of digital audio data.

10. A transmission system as recited in one of claims 1 or 9, wherein the information in the items includes analog video information, and wherein the conversion means further comprises:

video converting means, coupled to the identification encoding means, for converting the analog video signals into streams of digital video data.

11. A transmission system as recited in one of claims 1 or 9, wherein the information in the items includes partially encoded information, and wherein the conversion means further comprises:

digital input means, coupled to the identification encoding means, for receiving partial encoded information in the items.

12. A transmission system as recited in claim 1, wherein the data compression means comprises:

means for performing a multi-channel analysis of the formatted data for inclusion in a predetermined algorithm; and

compression processors for running the predetermined algorithm and for compressing the formatted data.

13. A transmission system as recited in claim 1, wherein the compression means comprises:

means for identifying patterns in the formatted data for inclusion in a predetermined algorithm; and

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compression processors for running the predetermined algorithm and for compressing the formatted data.

14. A transmission system as recited in claim 12, wherein the multi-dimensional analysis means includes means for performing the multi-dimensional analysis in the horizontal dimension.

15. A transmission system as recited in claim 12, wherein the multi-dimensional analysis means includes means for performing the multi-dimensional analysis in the vertical dimension.

16. A transmission system as recited in claim 12, wherein the multi-dimensional analysis means includes means for performing the multi-dimensional analysis in the time dimension.

17. A transmission system as recited in claim 12, wherein the multi-dimensional analysis means includes means for performing the multi-dimensional analysis in the zig-zag dimension.

18. A transmission system as recited in claim 1, wherein the information in the items includes digital signals, and wherein the conversion means further comprises formatting means for converting the digital signals of the information into formatted data with a predetermined format.

19. A distribution method responsive to requests from a user identifying items in a transmission system containing information to be sent from the transmission system to receiving systems at remote locations, the method comprising the steps of:

storing, in the transmission system, information from items in a compressed data form, the information including an identification code and being placed into ordered data blocks;

sending a request, by the user to the transmission system, for at least a part of the stored information to be transmitted to the one of the receiving systems at one of the remote location selected by the user;

sending at least a portion of the stored information from the transmission system to the receiving system at the selected remote location;

receiving the sent information by the receiving system at the selected remote location;

storing a complete copy of the received information in the receiving system at the selected remote location; and

playing back the stored copy of the information using the receiving system at the selected remote location at a time requested by the user.

20. The distribution method as recited in claim 19, wherein the information in the items includes analog and digital signals, and wherein the step of storing the information comprises the steps, performed by the transmission system, of:

converting the analog signals of the information to digital components;

formatting the digital signals of the information;

ordering the converted analog signals and the formatted digital signals into a sequence of addressable data blocks and;

compressing the ordered information.

21. The method of claim 19 wherein the step of storing the items includes the substep of storing the items in a plurality of compressed audio and video libraries in the transmission system.

22. The method of claim 19 further comprising the steps, performed by the transmission system, of:

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storing a list of items available to the user from at least one compressed data library; and providing the user with the list so that the user may remotely select a particular item for transmission.

23. The distribution method as recited in claim 19, wherein the step of storing includes the step of storing the received information at the head end of a cable television reception system.

24. The distribution method as recited in claim 19, wherein the step of storing includes the step of storing the received information in an intermediate storage device.

25. A receiving system responsive to a user input identifying a choice of an item stored in a source material library at a transmission system to be played back to a user at a location remote from the source material library, the item containing information to be sent from the transmission system to the receiving system, the receiving system comprising:

requesting means for transmitting to the source material library in the transmission system the identity of the item;

transceiver means, coupled to the requesting means, for receiving the item from the transmission system as at least one compressed, formatted data block;

receiver format conversion means, coupled to the transceiver means, for converting the at least one compressed, formatted data block into a format suitable for storage processing, and for playback at the receiver system;

storage means, coupled to the receiver format conversion means, for storing a complete copy of the formatted data;

decompressing means, coupled to the storage means, for decompressing the copy of the formatted data; and

output data conversion means, coupled to the decompressing means, for playing back the decompressed copy of the data at a time specified by the user.

26. A receiving system as recited in claim 25, further comprising:

user interface means for translating the input into a request for sending the requested information from the transmitter to the receiving system.

27. A receiving system as recited in claim 25, wherein the output data conversion means includes recording means which controls the playback of the copy.

28. A receiving system as recited in claim 25, wherein the storage means stores the formatted information until playback is requested by an operator.

29. A receiving system as recited in claim 25, wherein the formatted data includes video information, and wherein the decompressing means further comprises: video signal decompressing means for decompressing the video information contained in the formatted data.

30. A receiving system as recited in claim 29, wherein the output data conversion means further comprises: digital video output means, connected to the video signal decompressing means, for outputting a digital video signal; and analog video output means, connected to the video signal decompressing means, for outputting an analog video signal.

31. A receiving system as recited in claim 30, wherein the video output means further comprises: copy protection means for preventing copying by the user of protected information.

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32. A receiving system as recited in claim 25, wherein the formatted data includes audio information, and wherein the decompressing means further comprises: audio signal decompressing means for decompressing the audio information contained in the formatted data.

33. A receiving system as recited in claim 32, wherein the output data conversion means further comprises: digital audio output means, connected to the audio signal decompressing means, for outputting a digital audio signal; and analog audio output means, connected to the audio signal decompressing means, for outputting an analog audio signal.

34. A receiving system as recited in claim 25, wherein the formatted data includes audio and video information, and wherein the decompressing means further comprises:

video signal decompressing means for decompressing the video information contained in the formatted data; and

audio signal decompressing means for decompressing the audio information contained in the formatted data.

35. A receiving system as recited in claim 25, wherein the transceiver means receives the information via any one of telephone, ISDN, broadband ISDN, satellite, common carrier, computer channels, cable television systems, MAN, and microwave.

36. A receiving system as recited in claim 25, wherein the source material library is a compressed data library.

37. A receiving system as recited in claim 29, wherein the output data conversion means further comprises: digital video output means, connected to the video signal decompressing means, for outputting a digital video signal.

38. A receiving system as recited in claim 29, wherein the output data conversion means further comprises: analog video output means, connected to the video signal decompressing means, for outputting an analog video signal.

39. A receiving system as recited in claim 32, wherein the output data conversion means further comprises: digital audio output means, connected to the audio signal decompressing means, for outputting a digital audio signal.

40. A receiving system as recited in claim 32, wherein the output data conversion means further comprises: analog audio output means, connected to the audio signal decompressing means, for outputting an analog audio signal.

41. A method of transmitting information to remote locations, the transmission method comprising the steps, performed by a transmission system, of:

storing items having information in a source material library;

retrieving the information in the items from the source material library;

assigning a unique identification code to the retrieved information;

placing the retrieved information into a predetermined format as formatted data;

placing the formatted data into a sequence of addressable data blocks;

compressing the formatted and sequenced data blocks;

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storing, as a file, the compressed, formatted, and sequenced data blocks with the assigned unique identification code; and
 sending at least a portion of the file to one of the remote locations.

42. A transmission method as recited in claim 41, wherein the step of placing further includes the steps of: A/D converting analog signals of the retrieved information into a series of digital data bytes; and
 converting the series of digital data bytes into formatted data with a predetermined format.

43. A transmission method as recited in claim 41, wherein the step of placing further includes the steps of: converting digital signals of the retrieved information into predetermined voltage levels; and
 converting the predetermined voltage levels into formatted data with a predetermined format.

44. A transmission method as recited in claim 41, wherein the step of placing further includes the step of converting digital signals of the retrieved information into formatted data with a predetermined format.

45. A transmission method as recited in claim 41, wherein the storing step further comprises the step of: separately storing a plurality of files, each including compressed, sequenced data blocks.

46. A transmission method as recited in claim 45, further comprising the steps, performed by the transmission system, of:

- generating a listing of available items;
- receiving transmission requests to transmit available items; and
- retrieving stored formatted data blocks corresponding to requests from users.

47. A distribution system including a transmission system and a plurality of receiving systems at remote locations, the transmission system being responsive to requests identifying items containing information to be sent from the transmission system to the receiving systems at the remote locations, the distribution system comprising:

- storage means in the transmission system for storing information from the items in a compressed data form, in which the information includes an identification code and is placed into ordered data blocks;
- requesting means in the transmission system, coupled to the storage means, for receiving requests from a user for at least a part of the stored information to be transmitted to the receiving system at one of the remote locations selected by the user;
- transmission means in the transmission system, coupled to the requesting means, for sending at least a portion of the stored information to the receiving system at the selected remote location;
- receiving means in the receiving system for receiving the transmitted information;
- memory means in the receiving system, coupled to the receiving means, for storing a complete copy the received information; and
- playback means in the receiving system, coupled to the memory means, for playing back the stored copy of the received information at a time requested by the user.

48. A distribution system as recited in claim 47, wherein the information in the items includes analog and digital signals, and wherein the storage means further comprises:

- conversion means, for converting the analog signals of the information to digital components;
- formatting means, coupled to the conversion means, for formatting the digital signals of the information;

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ordering means, coupled to the formatting means, for ordering the converted analog signals and the formatted digital signals into a sequence of addressable data blocks and;

compression means, coupled to the ordering means, for compressing the ordered information.

49. A distribution system as recited in claim 47, wherein the memory means includes means for receiving information at the head end of a cable television reception system.

50. A distribution system as recited in claim 49, wherein the head end of the cable television reception system includes means for decompressing the received signals and distributing the decompressed received signals.

51. A distribution system as recited in claim 49, wherein the head end of the cable television reception system includes means for distributing compressed signals.

52. A distribution system as recited in claim 49, wherein the head end of the cable television reception system includes means for decompressing the received signals and for distributing the decompressed received signals and compressed received signals.

53. A distribution system as recited in claim 47, wherein the memory means is an intermediate storage device.

54. A method of receiving information at a receiving system from a transmission system which information is responsive to an input from a user, the input identifying a choice of an item stored in a source material library to be played back to the user at a receiving system at a location remote from the source material library, the item containing information to be sent from the transmission system to the receiving system, the receiving method comprising the steps of:

- transmitting the identity of an item from the user to the source material library at the transmission system;
- receiving at the receiving system the item from the transmission system as at least one compressed formatted data block;
- converting, at the receiving system, the at least one compressed formatted data into a format suitable for storage processing and for playback in real time;
- storing the converted information at the receiving system;
- decompressing the stored information at the receiving system; and
- playing back, at the receiving system, the decompressed information at a time specified by the user.

55. A receiving method, as recited in claim 54, wherein the decompressing step further includes the step of decompressing video information contained in the stored information.

56. A receiving method as recited in claim 54, wherein the decompressing step further includes the step of decompressing audio information contained in the stored information.

57. A receiving method as recited in claim 54, wherein the decompressing step further includes the steps of:

- decompressing video information contained in the stored information; and
- decompressing audio information contained in the stored information.

58. a receiving method as recited in claim 54, wherein the step of transmitting further includes the step of transmitting to a compressed data library the identity of an item.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,132,992
DATED : July 21, 1992
INVENTOR(S) : Paul Yurt et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 23,

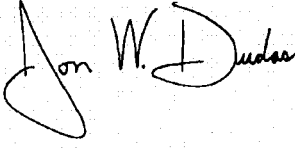
Line 42, after "the" insert -- user --;

Column 25,

Line 56, after "copy" insert -- of --.

Signed and Sealed this

Nineteenth Day of October, 2004

A handwritten signature in black ink, reading "Jon W. Dudas", is written over a rectangular area of the document that has been shaded with a light gray dot pattern.

JON W. DUDAS
Director of the United States Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 5,132,992
DATED : July 21, 1992
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Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

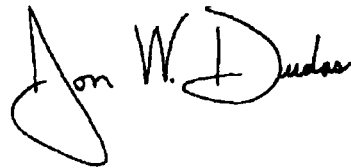
Column 20,
Line 67, "witha" should be -- with a --;

Column 21,
Line 23, delete "p1";
Line 58, "multi-channel" should be -- multi-dimensional --;

Column 26,
Line 64, "a" should be -- A --.

Signed and Sealed this

Eleventh Day of January, 2005

A handwritten signature in black ink, appearing to read "Jon W. Dudas". The signature is stylized with a large, looping initial "J" and a distinct "D".

JON W. DUDAS
Director of the United States Patent and Trademark Office

EXHIBIT

10



US006144702A

United States Patent

[19]

[11]

Patent Number:**6,144,702****Yurt et al.**

[45]

Date of Patent:***Nov. 7, 2000****[54] AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM****[75] Inventors:** Paul Yurt, Scottsdale, Ariz.; H. Lee Browne, Greenwich, Conn.**[73] Assignee:** Greenwich Information Technologies, LLC, Greenwich, Conn.**[*] Notice:** This patent is subject to a terminal disclaimer.

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[21] Appl. No.: 09/120,452

(List continued on next page.)

[22] Filed: Jul. 23, 1998**FOREIGN PATENT DOCUMENTS****Related U.S. Application Data**

[62] Division of application No. 08/630,590, Apr. 10, 1996, Pat. No. 6,002,720, which is a continuation of application No. 08/133,982, Oct. 8, 1993, Pat. No. 5,550,863, which is a continuation of application No. 07/862,508, Apr. 2, 1992, Pat. No. 5,253,275, which is a continuation of application No. 07/637,562, Jan. 7, 1991, Pat. No. 5,132,992.

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[51] Int. Cl.⁷ H04N 7/12
[52] U.S. Cl. 375/240.01; 375/377; 348/384.1
[58] Field of Search 375/240, 377, 375/240.01; 455/4.1, 4.2, 5.1, 5.2, 6.3; 348/6, 7, 8, 10, 12, 13, 17, 423, 384, 384.1

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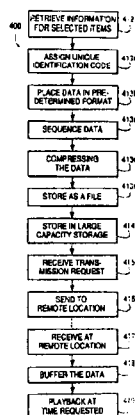
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Primary Examiner—Amanda T. Le
Attorney, Agent, or Firm—Howrey Simon Arnold & White, LLP

[57] ABSTRACT

A system of distributing video and/or audio information employs digital signal processing to achieve high rates of data compression. The compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in less than real time, for later playback and optional recording on standard audio and/or video tape.

42 Claims, 12 Drawing Sheets

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FIG. 1a

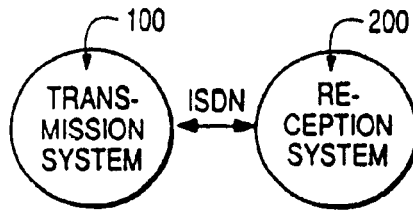


FIG. 1b

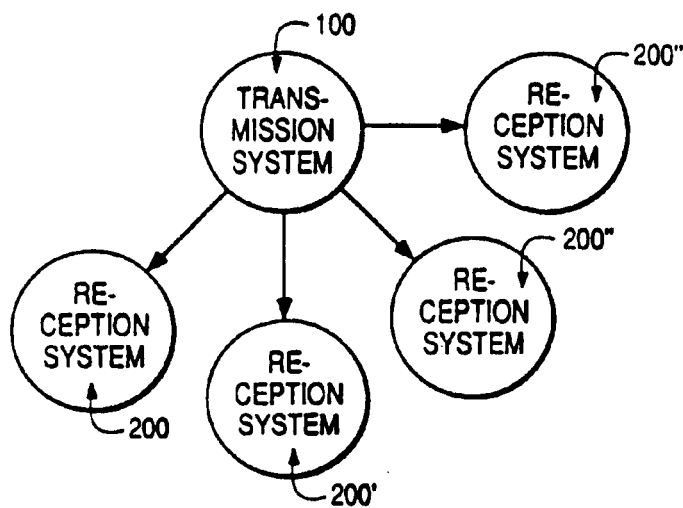
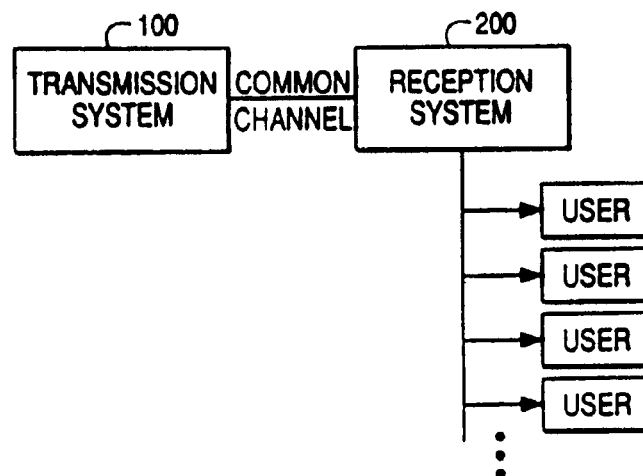
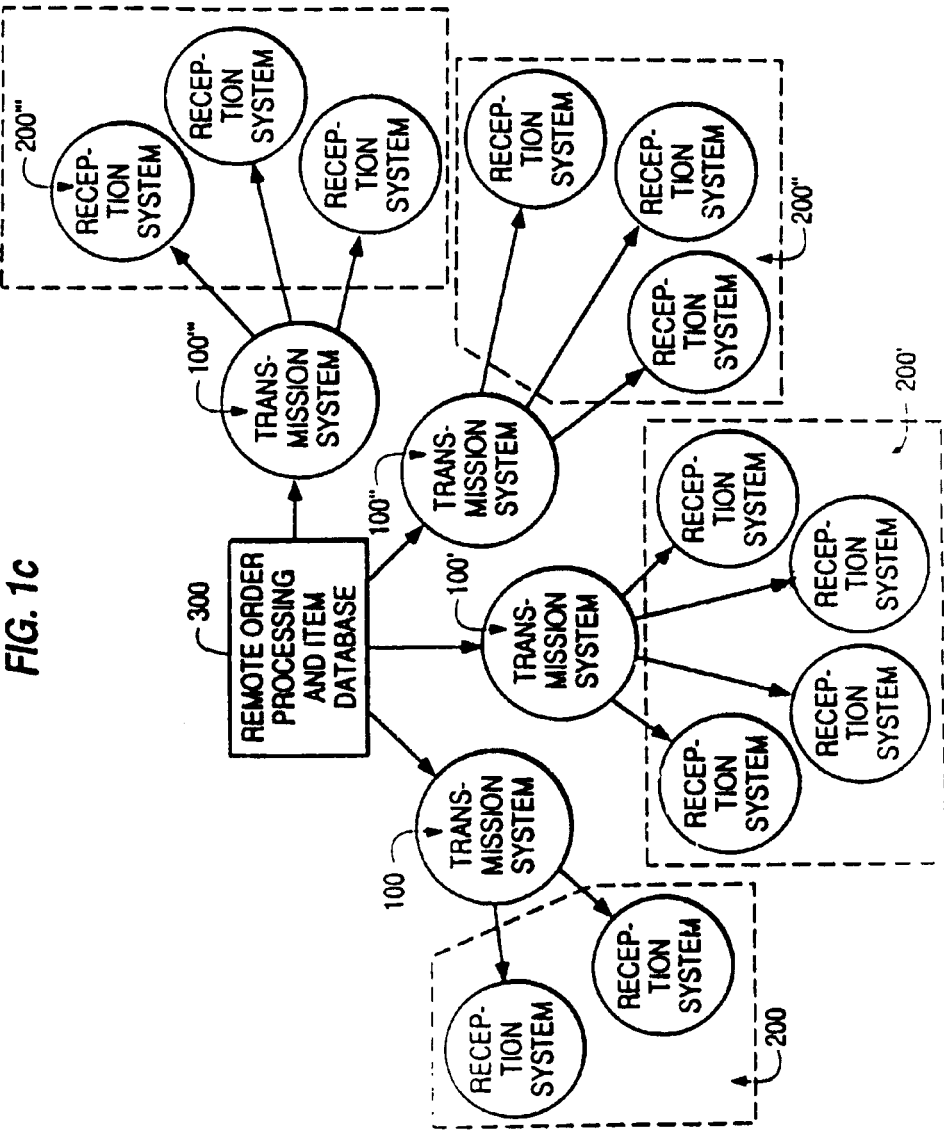


FIG. 1d





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FIG. 1e

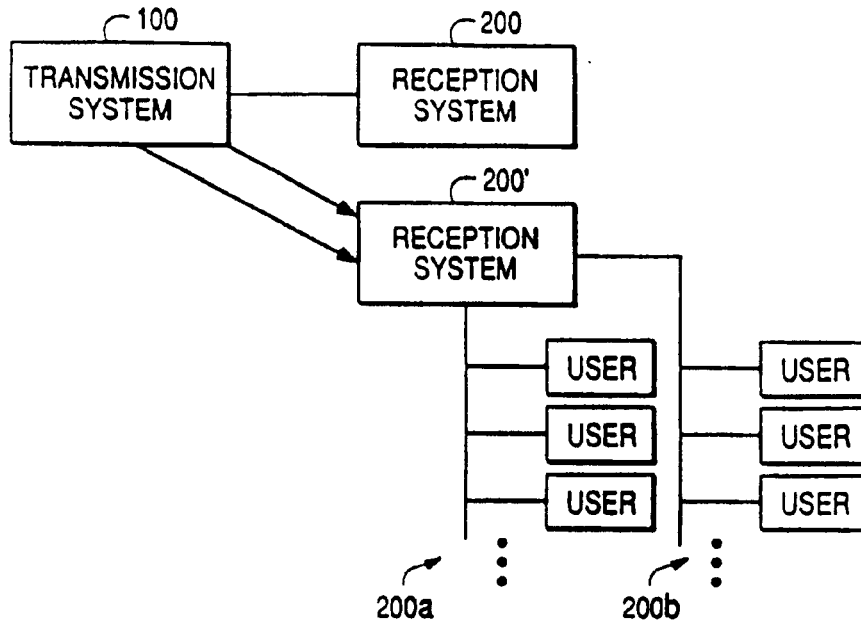
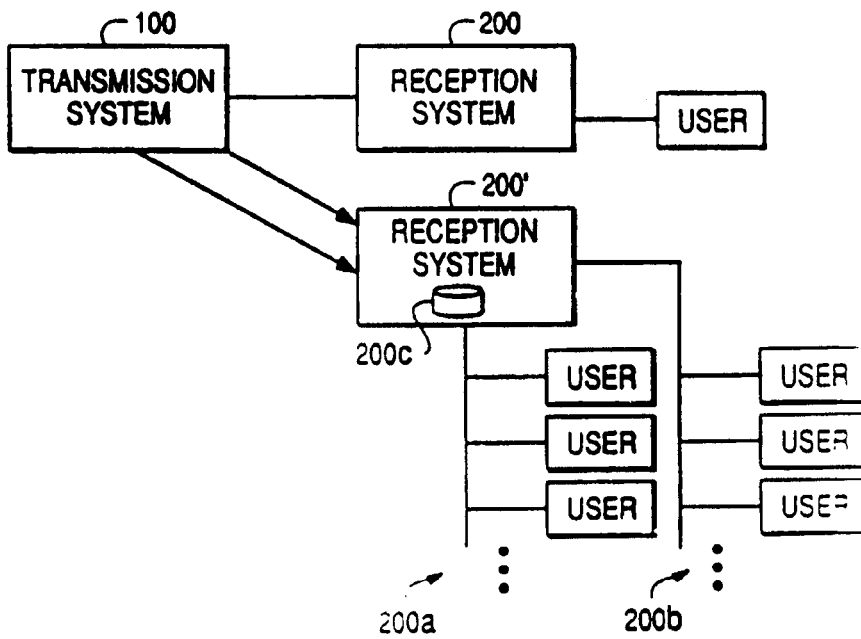


FIG. 1f

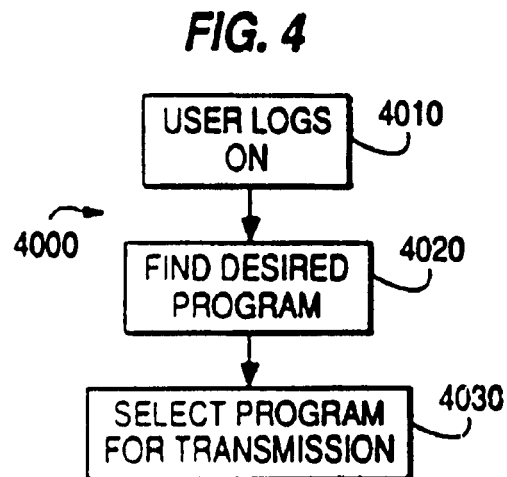
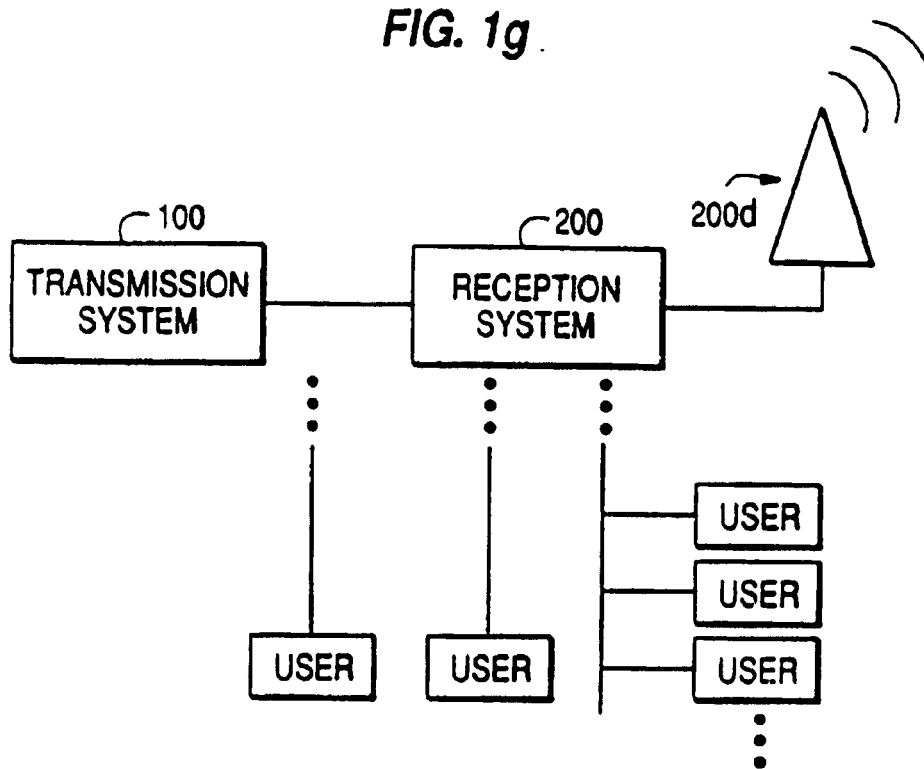


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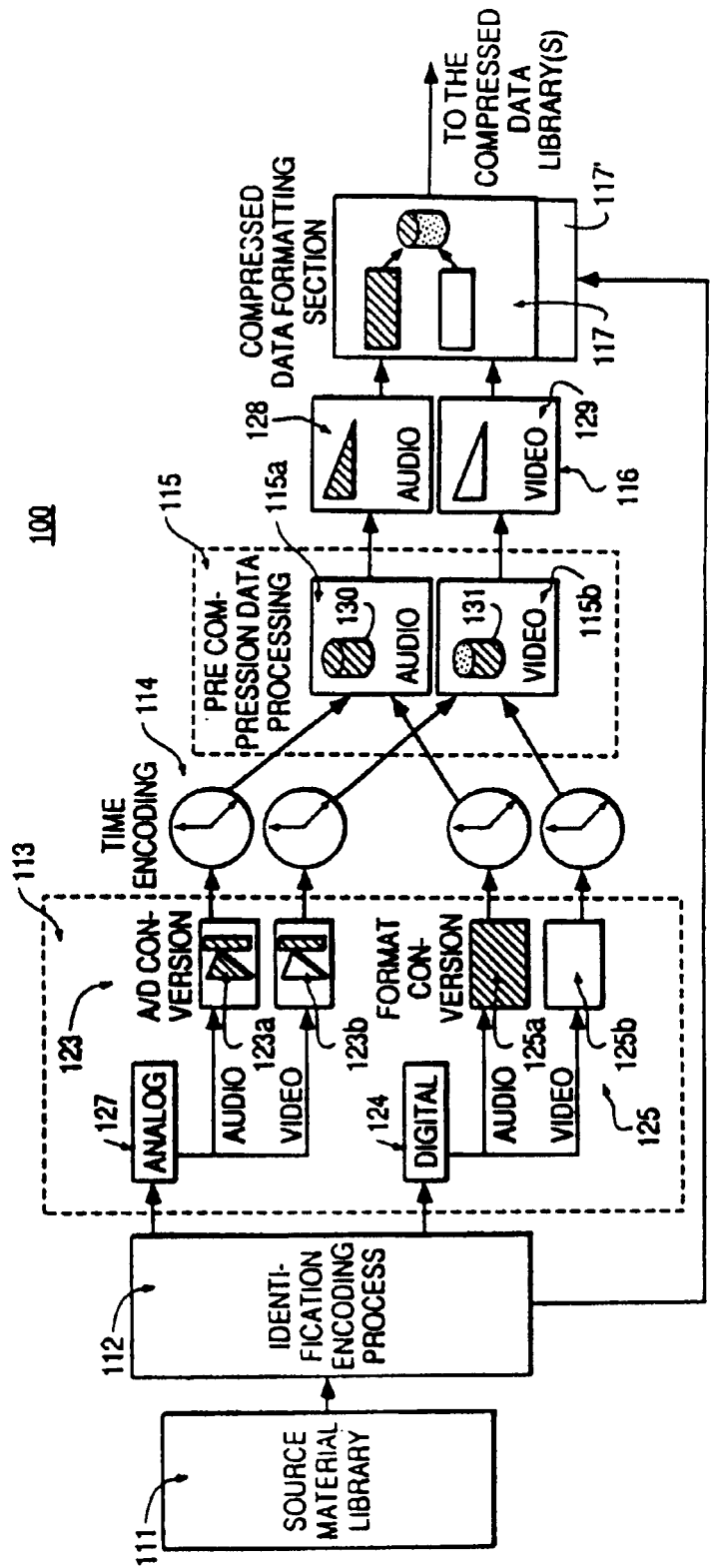


FIG. 2a

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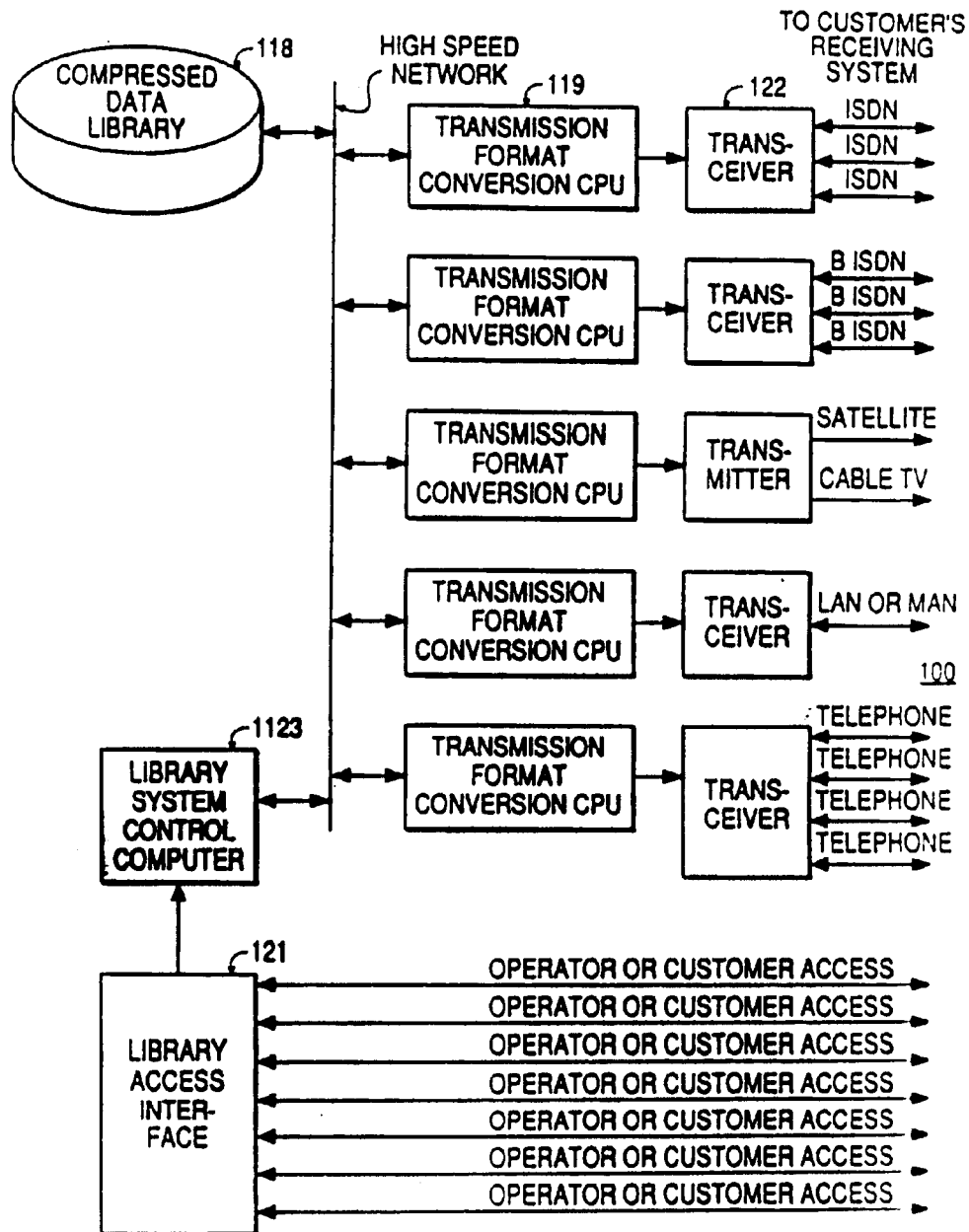


FIG. 2b

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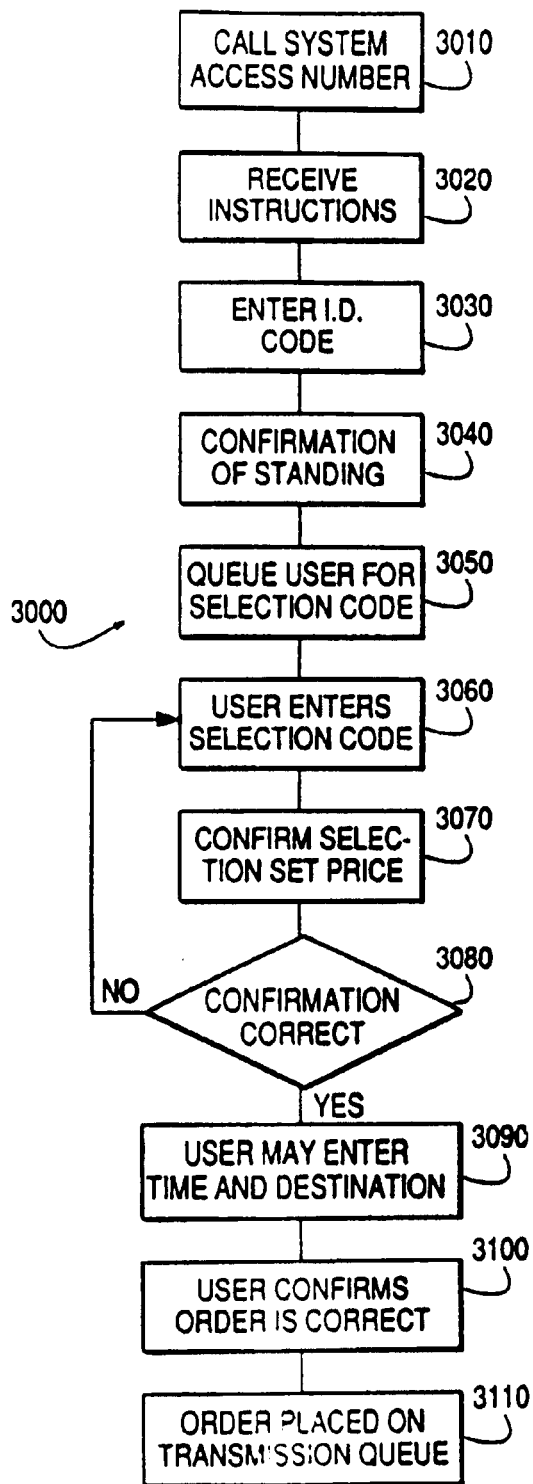


FIG. 3

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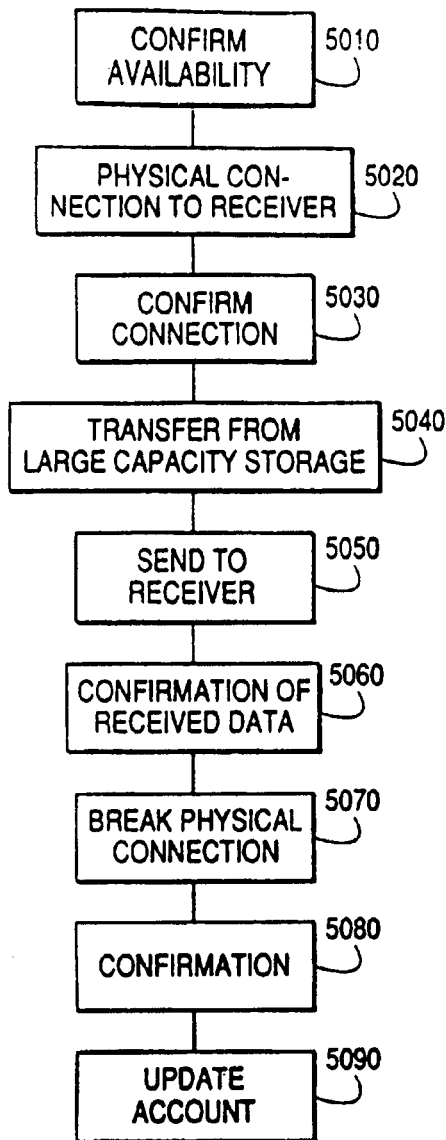


FIG. 5

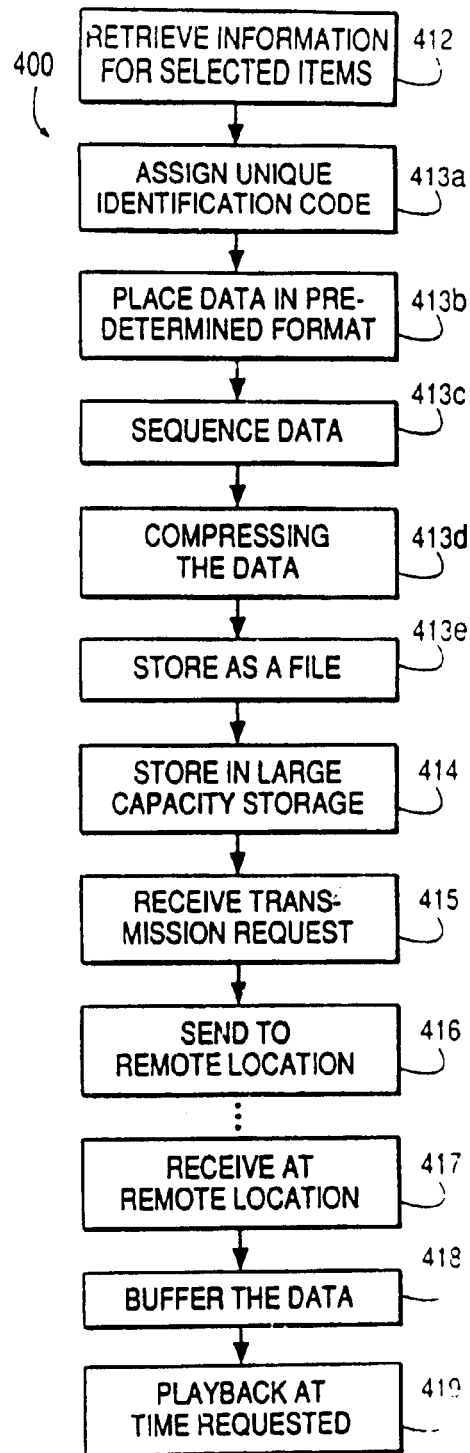


FIG. 7

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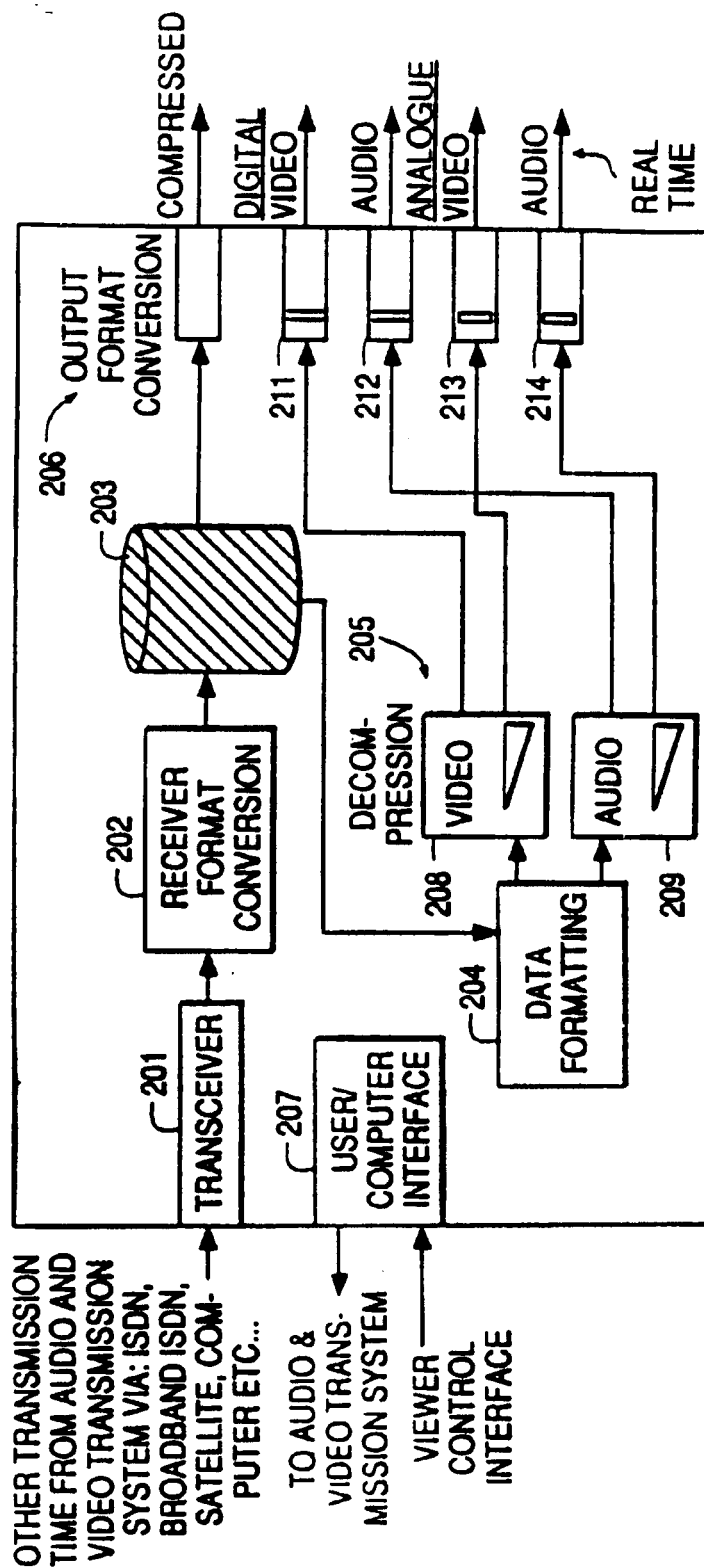


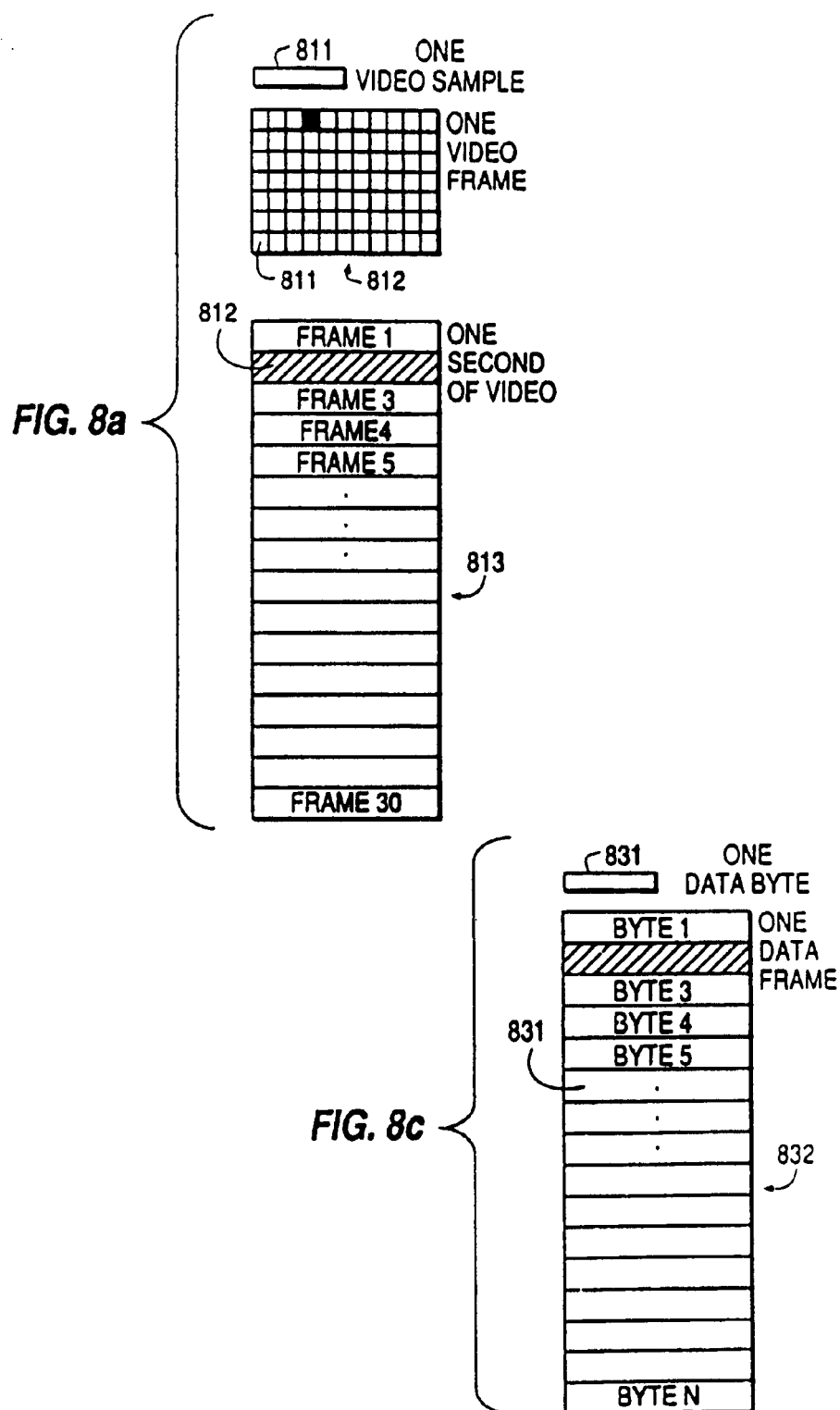
FIG. 6

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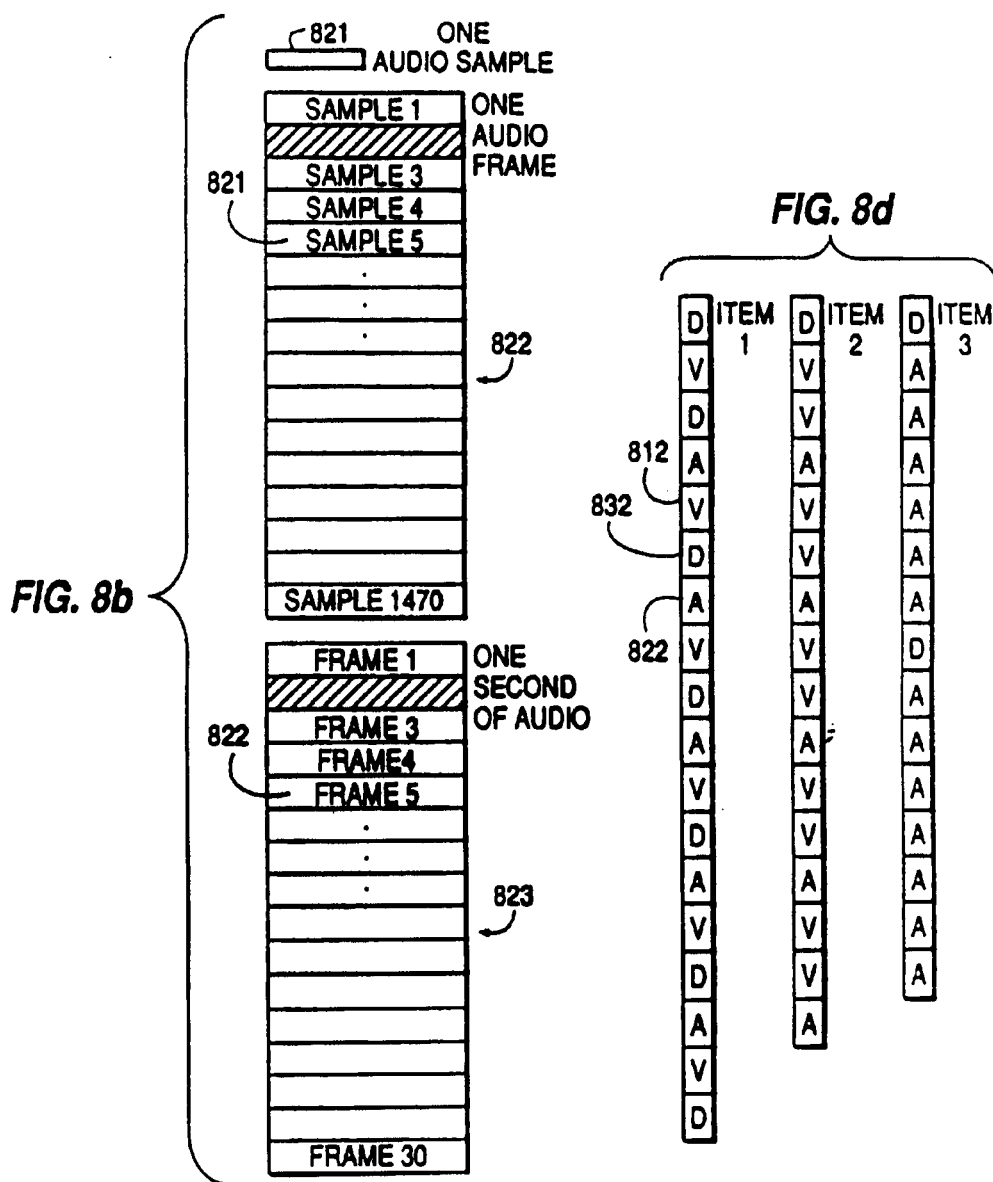


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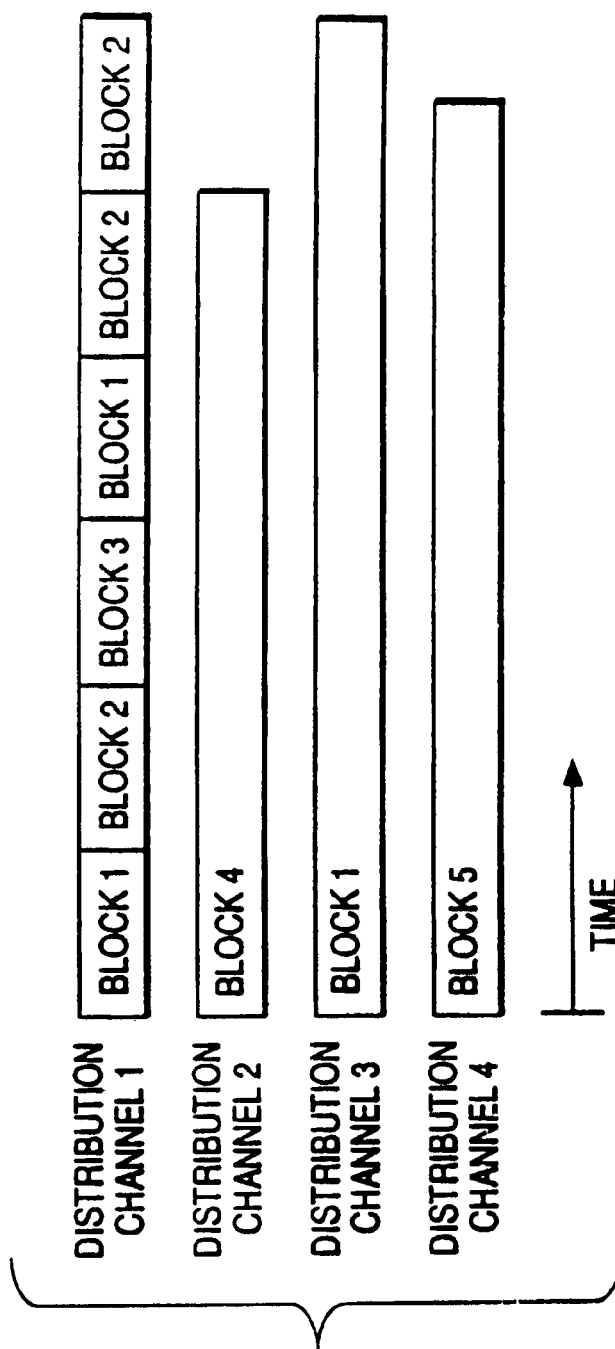


FIG. 8e

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1

AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM

This is a division of application Ser. No. 08/630,590, filed Apr. 10, 1996, which issued as U.S. Pat. No. 6,002,720, which is a continuation of application Ser. No. 08/133,982, filed Oct. 8, 1993, which issued as U.S. Pat. No. 5,550,863, which is a continuation of application Ser. No. 07/862,508, filed Apr. 2, 1992, which issued as U.S. Pat. No. 5,253,275, which is a continuation application of Ser. No. 07/637,562, filed Jan. 7, 1991, which issued as U.S. Pat. No. 5,132,992, which applications are hereby incorporated herein by reference.

BACKGROUND OF THE INVENTION

The present invention relates generally to an audio and video transmission and receiving system, and more specifically to such a system in which the user controls the access and the playback operations of selected material.

At the present time, only a video cassette recorder (VCR) or a laser disk player (LDP) allow a viewer to enjoy control over selection of particular audio/video material. Using either a VCR or an LDP requires the viewer to obtain a video tape either by rental or by purchase. Remote accessing of the material has not yet been integrated into an efficient system.

Several designs have been developed which provide the viewer with more convenient means of accessing material. One such design is disclosed in U.S. Pat. No. 4,506,387, issued to Walter. The Walter patent discloses a fully dedicated, multi-conductor, optical cable system that is wired to the viewer's premises. While the system affords the viewer some control over accessing the material, it requires that a location designated by the viewer by wired with a dedicated cable. The Walter system further requires the viewer be at that location for both ordering and viewing the audio/video material.

U.S. Pat. No. 4,890,320, issued to Monslow, describes a system which broadcasts viewer selected material to a viewer at a prescribed time. This system is limited in that it requires multiple viewers in multiple locations to view the audio/video material at the time it is broadcast, rather than allowing each viewer to choose his or her own viewing time. The system disclosed in Monslow also does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,590,516, issued to Abraham, discloses a system that uses a dedicated signal path, rather than multiple common carriers, to transmit audio/video programming. The receiver has no storage capability. The system provides for only display functions, which limits viewing to the time at which the material is ordered. Like Monslow, the Abraham system does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,963,995, issued to Lang, discloses an audio/video transceiver with the capability of editing and/or copying from one video tape to another using only a single tape deck. Lang does not disclose a system with one or more libraries wherein a plurality of system subscribers may access information stored in the film and tape library or libraries, and play back the selected information at a time and place selected by the subscriber.

It is therefore an object of the present invention to provide a user with the capability of accessing audio/video material by integrating both accessing and playback controls into a system that can use multiple existing communications channels.

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It is a further object of the present invention to provide a picture and sound transmission system which allows the user to remotely select audio/video material from any location that has either telephone service or a computer.

A still further object of the present invention is to provide a picture and sound transmission system wherein the selected audio/video material is sent over any one of several existing communication channels in a fraction of real time to any location chosen by the user that has a specified receiver.

Another object of the present invention is to provide a picture and sound transmission system wherein the user may play back the selected audio/video material at any time selected by the user and retain a copy of the audio/video material for multiple playbacks in the future.

Another object of the present invention is to provide a picture and sound transmission system wherein the information requested by the user may be sent as only audio information, only video information, or as a combination of audio and video information.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

SUMMARY OF THE INVENTION

To achieve the objects in accordance with the purposes of the present invention, as embodied and described herein, the transmission and receiving system for providing information to remote locations comprises source material library means prior to identification and compression; identification encoding means for retrieving the information for the items from the source material library means and for assigning a unique identification code to the retrieved information; conversion means, coupled to identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks; compression means, coupled to the ordering means, for compressing the formatted and sequenced data; compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data received from the compression means with the unique identification code assigned by the identification encoding means; and transmitter means, coupled to the compressed data storing means, for sending at least a portion of a specific file to a specific one of the remote locations.

The present invention further comprises a distribution method responsive to requests identifying information to be sent from a transmission system to a remote location, the method comprising the steps of storing audio and video information in a compressed data form; requesting transmission, by a user, of at least a part of the stored compressed information to the remote location; sending at least a portion of the stored compressed information to the remote location; receiving the sent information at the remote location; buffering the processed information at the remote location; and playing back the buffered information in real time at a time requested by the user.

Additionally, the present invention comprises a receiving system responsive to a user input identifying a choice of an item stored in a source material library to be played back to the subscriber at a location remote from the source material library, the item containing information to be sent from a

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transmitter to the receiving system, and wherein the receiving system comprises transceiver means for automatically receiving the requested information from the transmitter as compressed formatted data blocks; receiver format conversion means, coupled to the transceiver means, for converting the compressed formatted data blocks into a format suitable for storage and processing resulting in playback in real time; storage means, coupled to the receiver format conversion means, for holding the compressed formatted data; decompressing means, coupled to the receiver format conversion means, for decompressing the compressed formatted information; and output data conversion means, coupled to the decompressing means, for playing back the decompressed information in real time at a time specified by the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate the presently preferred apparatus and method of the invention and, together with the general description given above and the detailed description of the preferred embodiment given below serve to explain the principles of the invention. In the drawings:

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention;

FIGS. 2a and 2b are detailed block diagrams of preferred implementation of the transmission system of the present invention;

FIG. 3 is a flowchart of a preferred method of ordering a selection from a library in accordance with the present invention;

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention;

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention;

FIG. 6 is a block diagram of a preferred implementation of the receiving system of the present invention;

FIG. 7 is a flowchart of a preferred method of distribution of the present invention; and

FIGS. 8a-8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention. FIGS. 1a, 1b, 1d, 1e, 1f, and 1g each show transmission system 100, described in more detail below with respect to FIGS. 2a and 2b. A user of the transmission and receiving system of the present invention preferably accesses transmission system 100 by calling a phone number or by typing commands into a computer. The user then chooses audio and/or video material from a list of available items which he or she wants to listen to and/or watch.

As shown in FIG. 1a, the transmission and receiving system may preferably comprise a peer to peer configuration where one transmission system 100 communicates with one reception system 200. As shown in FIG. 1b, the transmission and receiving system of the present invention may alternatively comprise a plurality of reception systems 200, 200', 200'', and 200''', which are each associated with a single transmission system 100.

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FIG. 1c shows a high level block diagram of the transmission and receiving system of the present invention including remote order processing and item database 300, described in more detail with respect to FIG. 3. Remote order processing and item database 300 preferably enables users to access desired items by remote communication. The remote order processing and item database 300 may communicate with a plurality of transmission systems 100, 100', 100'', and 100''', each of which communicates with a respective set of reception systems 200, 200', 200'', and 200'''. Each of the reception systems in sets 200, 200', 200'', and 200''' may preferably communicate with a plurality of users.

FIG. 1d shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of users via a reception system 200 configured as a cable television system.

FIG. 1e shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of reception systems 200 and 200'. In the configuration shown in FIG. 1e, reception system 200 is a direct connection system wherein a user is directly connected to transmission system 100. Reception system 200' preferably includes a first cable television system 200a and a second cable television system 200b. Users of cable television systems 200a and 200b are indirectly connected to transmission system 100.

FIG. 1f shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing via several channels to reception systems 200 and 200'. Reception system 200 is preferably non-buffering. In such a system, users are directly connected to transmission system 100, as in reception system 200 in FIG. 1e.

Reception system 200' shown in FIG. 1f is a cable television system, as shown in reception system 200' of FIG. 1e. In FIG. 1f, the reception system 200' is preferably buffering, which means that users may receive requested material at a delayed time. The material is buffered in intermediate storage device 200c in reception system 200'.

In the configuration of FIG. 1f, decompression of the requested material may preferably occur at the head end of a cable television reception system 200'. Thus, distribution may be provided to users via standard television encoding methods downstream of the head end of the cable distribution system. This method is preferred for users who only have cable television decoders and standard television receivers.

FIG. 1g shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing to a reception system 200, which then preferably transmits requested material over airwave communication channels 200d, to a plurality of users. The transmission and receiving system shown in FIG. 1g may preferably transmit either compressed or uncompressed data, depending on the requirements and existing equipment of the user. The airwave transmission and receiving system shown in FIG. 1g may preferably employ either VHF, UHF or satellite broadcasting systems.

With respect to the transmission and receiving systems set forth in FIGS. 1a-1g, the requested material may be fully compressed and encoded, partly decompressed at some stage in transmission system 100, or fully decompressed prior to transmission. The reception systems 200 may either buffer the requested material for later viewing, or decom-

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press in real time the requested material as it is distributed by transmission system 100. Alternatively, the reception systems 200 of the present invention may perform a combination of buffering and non-buffering by buffering some of the requested material and decompressing the remainder of the requested material for immediate viewing as it is distributed by transmission system 100.

In direct connection configurations, such as reception systems 200 shown in FIGS. 1e and 1f, the user preferably selects the reception system 200 to which the requested material is sent, and optionally selects the time playback of the requested material as desired. Accordingly, the user may remotely access the transmission system 100 from a location different than the location of reception system 200 where the material will be sent and/or played back. Thus, for example, a user may preferably call transmission system 100 from work and have a movie sent to their house to be played back after dinner or at any later time of their choosing.

In non-direct connection reception systems such as shown in reception system 200' of FIG. 1f, intermediate storage device 200c may preferably include, for example, sixteen hours of random access internal audio and video storage. A reception system with such storage is capable of storing several requested items for future playback. The user could then view and/or record a copy of the decompressed requested material in real time, or compressed in non-real time, at a time of their choosing. Accordingly, the user would not have to make a trip to the store to purchase or rent the requested material.

In any of the transmission and receiving systems illustrated in FIGS. 1a-1g, the requested material may be copy protected. To achieve copy protection, the requested material, as an item, is encoded as copy protected during storage encoding in transmission system 100. The user may then play back the item only one time. The user may also optionally review select portions of the item prior to its automatic erasure from the memory of the reception system 200. In this way, requested material may be distributed to "view only" users and also to "view and copy" users who wish to retain copies of the distributed items.

Copy protected programs, when decompressed and played back, would have a copy protection technique applied to the analog and digital output signals. The analog video output is protected from copying through the use of irregular sync signals, which makes the signal viewable on a standard television but not recordable on a audio/video recorder. The receiving system recognizes copy protected programs and disables the audio-video recorder. Digital output protection is effected through copy protect bit settings in the digital output signal, thus preventing a compatible digital recorder from recording the digital audio and/or video signal stream. A protected item will not be passed to the compressed data port of the digital recorder for off line storage.

FIGS. 2a and 2b illustrate detailed block diagrams of preferred implementations of the transmission system 100 of the present invention. Transmission system 100 may either be located in one facility or may be spread over a plurality of facilities. A preferred embodiment of transmission system 100 may preferably include only some of the elements shown in FIGS. 2a and 2b.

Transmission system 100 of a preferred embodiment of the present invention preferably includes source material library means for temporary storage of items prior to conversion and storage in a compressed data library means. The items of information may include analog and digital audio

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and video information as well as physical objects such as books and records which require conversion to a compatible media type before converting, compressing and storing their audio and video data in the compressed data library means.

As shown in FIG. 2a, the source material library means included in transmission system 100 preferably includes a source material library 111. The source material library 111 may include different types of materials including television programs, movies, audio recordings, still pictures, files, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects. These materials are converted to or recorded on a media format compatible to the digital and analog inputs of the system prior to being compressed and stored in a compressed data library 118. The different media formats preferably include digital or analog audio and video tapes, laser disks, film images, optical disks, magnetic disks, computer tapes, disks and, cartridges.

The source material library 111, according to a preferred embodiment of the present invention, may preferably include a single source material library or a plurality of source material libraries. If there are a plurality of source material libraries, they may be geographically located close together or may be located far apart. The plurality of source material libraries may communicate using methods and channels similar to the methods and channel types which libraries may employ for communication with the receiving system 200 of the user, or the source material libraries may communicate via any available method.

Prior to being made accessible to a user of the transmission and receiving system of the present invention, the item must be stored in at least one compressed data library 118, and given a unique identification code by identification encoder 112. Storage encoding, performed by identification encoder 112, aside from giving the item a unique identification code, optionally involves logging details about the item, called program notes, and assigning the item a popularity code. Storage encoding may be performed just prior to conversion of the item for transmission to reception system 200, at any time after starting the conversion process, or after storing the item in the compressed data library 118.

In a preferred embodiment of the present invention, the method of encoding the information involves assigning a unique identification code and a file address to the item, assigning a popularity code, and inputting the program notes. This process is identical for any of the different media types stored in the source material library 111.

The transmission system 100 of the present invention also preferably includes conversion means 113 for placing the items from source material library 111 into a predetermined format as formatted data. In the preferred embodiment, after identification encoding is performed by identification encoder 112, the retrieved information is placed into a predetermined format as formatted data by the converter 113. The items stored in source material library 111 and encoded by identification encoder 112 may be in either analog or digital form. Converter 113 therefore includes analog input receiver 127 and digital input receiver 124. If items have only one format, only one type of input receiver 124 or 127 is necessary.

When the information from identification encoder 112 is digital, the digital signal is input to the digital input receiver 124 where it is converted to a proper voltage. A formatter 125 sets the correct bit rates and encodes into least significant bit (lsb) first pulse code modulated (pcm) data. Formatter 125 includes digital audio formatter 125a and digital

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video formatter **125b**. The digital audio information is input into a digital audio formatter **125a** and the digital video information, if any, is input into digital video formatter **125b**. Formatter **125** outputs the data in a predetermined format.

When the retrieved information from identification encoder **112** is analog, the information is input to an analog-to-digital converter **123** to convert the analog data of the retrieved information into a series of digital data bytes. Converter **123** preferably forms the digital data bytes into the same format as the output of formatter **125**.

Converter **123** preferably includes an analog audio converter **123a** and an analog video converter **123b**. The analog audio converter **123a** preferably converts the retrieved audio signal into pcm data samples at a fixed sampling rate. The analog video converter **123b** preferably converts the analog video information, retrieved from identification encoder **123**, into pcm data also at fixed sampling rates.

If the retrieved information being converted contains only audio information, then the audio signal is fed to the appropriate digital audio input or analog audio input. When the retrieved information contains both audio and video information, the audio and video signals are passed simultaneously to the audio and video converter inputs. Synchronization between the audio and video data can be maintained in this way.

If, for example, the retrieved information to be converted from the source material library **111** is a motion picture film, the picture frames in the film are passed through a digital telecine device to the digital input receiver **124**. Format conversion is then preferably performed by digital video formatter **125b**. Accompanying audio information is passed through an optical or magnetic digital playback device. This device is connected to digital audio formatter **125a**.

In some cases, such as in inter-library transfers, incoming materials may be in a previously compressed form so that there is no need to perform compression by precompression processor **115** and compressors **128** and **129**. In such a case, retrieved items are passed directly from identification encoder **112** to the compressed data formatter **117**. The item database records, such as the program notes which may also be input from another system, to the compressed data formatting section **117**, where this data, if necessary, is reformatted to make it compatible with the material stored in compressed data library **118**. Such material may be received in the form of digital tapes or via existing communication channels and may preferably input directly to a short term storage **117'** in the compressed data formatting section **117**.

The transmission system **100** of the present invention also preferably includes ordering means for placing the formatted information into a sequence of addressable data blocks. As shown in FIG. **2a**, the ordering means in the preferred embodiment includes time encoder **114**. After the retrieved information is converted and formatted by the converter **113**, the information may be time encoded by the time encoder **114**. Time encoder **114** places the blocks of converted formatted information from converter **113** into a group of addressable blocks. The preferred addressing scheme employs time encoding. Time encoding allows realignment of the audio and video information in the compressed data formatting section **117** after separate audio and video compression processing by precompression processor **115** and compressor **116**.

The converted formatted information of the requested material is then preferably in the form of a series of digital data bytes which represent frames of video data and samples

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of the audio data. A preferred relationship of the audio and video bytes to each other is shown in FIG. **8**. Incoming signals are input and converted in sequence, starting with the first and ending with the last frame of the video data, and starting with the first and ending with the last sample of the audio data. Time encoding by time encoder **114** is achieved by assigning relative time markers to the audio and video data as it passes from the converter **113** through the time encoder **114** to the precompression processor **115**. Realignment of audio and video data, system addressing of particular data bytes, and user addressing of particular portions of items are all made possible through time encoding.

Through the use of the address of an item and its frame number it is possible to address any particular block of audio or video data desired. From here, further addressing down to the individual byte is possible. Frames and groups of frames may preferably be further broken down, as necessary to the individual bytes and bits, as required for certain processing within the system.

User and system addressing requirements dictate the level of granularity available to any particular section of the system. Users are able to move through data in various modes, thus moving through frame addresses at various rates. For example, a user may desire to listen to a particular song. They may preferably enter the song number either when requesting the item from the compressed data library **118** and only have that song sent to their receiving system **200** or they may preferably select that particular song from the items buffered in their receiving system **200**. Internal to the system, the song is associated with a starting frame number, which was indexed by the system operator via the storage encoding process. The system item database may contain information records for individual frames or groups of frames. These can represent still frames, chapters, songs, book pages, etc. The frames are a subset of, and are contained within, the items stored in the compressed data library **118**. Time encoding by time encoder **114** makes items and subsets of items retrievable and addressable throughout the transmission system **100**. Time encoding enables subsequent compression of the information to be improved because data reduction processes may be performed in the time dimension. This is described in greater detail below.

The transmission system **100** of the present invention also preferably includes data compression means for compressing the formatted and sequenced data. The sequence of addressable data blocks which was time encoded and output by time encoder **114** is preferably sent to precompression processor **115**. The data arriving from time encoder **114** may be at various frame rates and of various formats. Precompression processor **115** preferably includes audio precompressor **115a** and video precompressor **115b**.

Video precompression processor **115b** buffers incoming video data and converts the aspect ratio and frame rate of the data, as required by compression processor **116**. The frame buffer **131** of video precompression processor **115b** holds all incoming data until the data is compressed by the data compressor **116**. The incoming video data is processed for sample rate optimization, aspect ratio fitting and buffered in buffer **130** for compression processing by the video precompression processor **115b**.

Video precompression processor **115b** processes the incoming video data so that it fits into the aspect ratio of the transmission and receiving system of the present invention. When incoming material with a different aspect ratio than the aspect ratio of the system is selected, a chosen background is preferably placed around the inactive region of the

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video information. In this way, no data is lost to differences in the aspect ratio between incoming material, and the converted and compressed data stored in the transmission system 100. Images resulting from a different aspect ratio may have an inactive region where background information is contained, or may be converted into a best fit arrangement. Output from the video precompression processor 115b is stored in the frame buffer 131, which is dual ported and is directly addressable by video compressor 129.

The incoming audio data is processed for sample rate and word length optimization and is then buffered in buffer 130 for compression processing by the audio precompression processor 115a. Audio precompression processor 115a may preferably transcode incoming audio information, as required, to create the optimum sample rate and word lengths for compression processing. The output of the audio precompression processor 115a is a constant sample rate signal of a fixed word length which is buffered in frame buffer 130. The frame buffer 130 is dual ported and is directly addressable by audio compressor 128. Blocking the audio data into frames at audio precompression processor 115a makes it possible to work with the audio data as addressable packets of information.

Once precompression processing is finished, the frames are compressed by the data processor 116. Compressor 116 preferably comprises an audio data compressor 128 and a video data compressor 129. The benefits of data compression performed by data compressor 116 are shortened transmission time, faster access time, greater storage capacity, and smaller storage space requirements. Compression processing performed by compressors 128 and 129 requires multiple samples of data to perform optimum compression. Audio and video information is preferably converted into blocks of data organized in groups for compression processing by audio compressor 128 and video compressor 129, respectively. These blocks are organized as frames, and a number of frames are contained respectively in the buffers 130 and 131. By analyzing a series of frames it is possible to optimize the compression process.

Audio data is preferably compressed by audio compressor 128 by application of an adaptive differential pulse code modulation (ADPCM) process to the audio data. This compression process, which may be implemented by the apt-x 100 digital audio compression system, is manufactured by Audio Processing Technology (APT). Audio compression ratios of 8x or greater are achieved with the APT system.

Compression by compressor 116 may be performed on a group of 24 video frames may preferably be passed in sequence to the frame buffer 130 of the video precompression processor 115b where they are analyzed by video compressor 129 which performs data reduction processing on the video data. Video compression is preferably performed by video compressor 129. Video compression is achieved by the use of processors running algorithms designed to provide the greatest amount of data compression possible. Video data compression preferably involves applying two processes: a discrete cosine transform, and motion compensation. This process is described in "A Chip Set Core of Image Compression", by Artieri and Colavin. Multiple frames of video data may preferably be analyzed for patterns in the horizontal (H), vertical (V), diagonal (zigzag) and time (Z) axis. By finding repetition in the video data, redundancy may be removed and the video data may be compressed with a minimal loss of information.

In accordance with a preferred embodiment of the present invention, the transmission system 100 may further com-

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prise compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data with the unique identification code received from the data compression means. After compression processing by compressor 116, the compressed audio and video data is preferably formatted and placed into a single file by the compressed data storage means 117. The file may contain the compressed audio and/or video data, time markers, and the program notes. The file is addressable through the unique identification code assigned to the data by the identification encoder 112.

Further, according to the present invention, the transmission system preferably includes compressed data library means for separately storing composite formatted data blocks for each of the files. The compressed data storage means preferably includes compressed data library 118, as shown in FIG. 2b. After the data is processed into a file by the compressed data storage means 117, it is preferably stored in a compressed data library 118. In a preferred embodiment, compressed data library 118 is a network of mass storage devices connected together via a high speed network. Access to any of the files stored in compressed data library 118 is available from multiple reception systems 200 connected to the transmission and receiving system.

Stored items are preferably accessed in compressed data library 118 through a unique address code. The unique address code is a file address for uniquely identifying the compressed data items stored in the compressed data library section of a library system. This file address, combined with the frame number, and the library system address allow for complete addressability of all items stored in one or more compressed data libraries 118. Compressed data library addresses along with receiving system addresses are used to form a completely unique address for distribution system control.

The unique address code is an address assigned to the item by the system operator during storage encoding, which is preferably done prior to long term storage in the compressed data library 118. In a preferred embodiment, the unique address code is used for requesting and accessing information and items throughout the transmission and receiving system. The unique address code makes access to the requested data possible.

The storage encoding process performed by encoder 112 also allows entry of item notes and production credits. Production credits may include the title, names of the creators of the item such as the producer, director, actors, etc. Other details regarding the item which may be of interest and which may make the items more accessible are kept in an item database.

Item addresses are mapped to item names by identification encoder 112 and may preferably be used as an alternative method of accessing items. The item names are easier to remember, thus making user access more intuitive by using item names. The storage encoding entry process performed in identification encoder 112 operates a program which updates a master item database containing facts regarding items in the compressed data library system. The storage encoding process may be run by the system operator whereby the system operator accesses the master item database to track and describe items stored in one or more compressed data libraries. The names and other facts in the item database may preferably be updated at any time via the storage encoding process. Changes made to the master item database may be periodically sent to the remote order processing and item database 300.

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As described in more detail later, a user may preferably access an item via its unique identification code, via its title, or the user may use other known facts for accessing an item. The user may access items in the compressed data library 118 directly using the unique address code or he user may obtain access via the remote order processing and item database 300. Indirect access via the remote order processing and item database 300 is possible using, for example, a synthesized voice system, a query type of computer program interface, or customer assistance operators. In addition to providing interactive access to the remote order processing and item database 300, a catalog listing some or all available titles may also preferably be published. With a published catalog, users may obtain the unique address code for an item very easily thereby allowing for retrieval from the compressed data library 118 without any help from an interactive system.

To achieve user access via an interactive system, facts about the items may be kept in files as a part of the items or the facts may be kept separately, for example, by systems which only inform users of the available items and take orders. For example, in systems which have portions split in separate locations, the facts about the items may be separated from the items themselves and stored in separate files. A system of this type can distribute user orders to other portions of the transmission and receiving system for ultimate distribution to the requesting user. Further, to support a plurality of users, multiple versions of the item database may preferably reside either on multiple database servers, in catalogs, or on other computer systems.

The item database master may reside in the system control computer 1123 where may be updated and kept current to the content of the compressed data library 118. The data stored in the item database master may be accessed by users via application programs, running on the system control computer 1123, and on the reception system 200 of the user. Users may connect to the item database via any available telecommunication channels. Copies of the item database master may be updated and informed of new entries into compressed data library 118 at periodic intervals determined by the system manager.

Other copies of the item database master may also be made available to users from the remote order processing and item database 300 which batch processes and downloads user requests to the control computer 1123 of the compressed data library 118 via standard telecommunications or high speed communication channels. Moreover, multiple remote order processing and item database 300 sites make it possible for more locations to process orders than there are library facilities, and thus make order processing more efficient.

Preferably, access of a requested item via the remote order processing and item database 300 operates as follows. If the user does not know the title of the desired item, he or she may request the item by naming other unique facts related to the item. For example, a user would be able to access an item about Tibetan Medicine by asking for all items which include information about "Tibet" and include information about "Medicine." The remote order processing and item database 300 would then be searched for all records matching this request. If there is more than one item with a match, each of the names of the matching items are preferably indicated to the user. The user then selects the item or items that he or she desires. Upon selection and confirmation, by the user, a request for transmission of a particular item or items is sent to the distribution manager program of the system control computer 1123. The request contains the

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address of the user, the address of the item, and optionally includes specific frame numbers, and a desired viewing time of the item.

The storage encoding process performed by identification encoder 112 also allows entry of a popularity code. The popularity code is preferably assigned on the basis of how often the corresponding item is expected to be requested from the compressed data library 118. This popularity code can be used to determine the most appropriate form of media for storage of the compressed data in a mixed media system. Mixed media systems are preferably employed as more cost effective storage in very large compressed data libraries 118. Once assigned, the popularity code may be dynamically updated, by factoring item usage against system usage. Thus, stored items are dynamically moved to the most appropriate media over their life in the compressed data library 118. If a particular item stored in compressed data library 118 is retrieved frequently by users, storage in compressed data library 118 is preferably on higher speed, more reliable, and probably more expensive media. Such media includes Winchester and magneto-optical disks.

If an item stored in compressed data library 118 is retrieved less frequently, it may be stored in the compressed data library 118 on a digital cassette tape. Examples of such cassette tapes are a Honeywell RSS-600 (Honeywell Inc. Minneapolis Minn.), Summus JukeBoxFilm and tape library (Summus Computer Systems, Houston, Tex. 800-255-9638), or equivalent cassette tapes. All items stored in the compressed data library 118 are on line and are connected to the high speed network. Thus, they may be readily accessed.

Instead of using a remote order processing and item database 300, the compressed data library 118 may include the program notes which were input by the system operator. The program notes may preferably include the title of the item stored in the compressed data library 118, chapter or song titles, running times, credits, the producer of the item, acting and production credits, etc. The program notes of an item stored in the compressed data library 118 may be thus contained within the compressed data file formed in the compressed data formatter 117.

In some cases, where multiple compressed data libraries 118 are organized, the popularity code may dictate distribution of a particular item to multiple distribution systems. In such cases, a copy of the compressed data is sent to another library and the other library can then distribute the compressed data to users concurrently with the original compressed data library 118.

The compressed data library 118 is composed of a network of storage devices connected through a High Performance Parallel Interface (HPPI) Super Controller (available from Maximum Strategy Inc., San Jose, Calif.). Therefore, multiple communication controllers may preferably access the large quantity of data stored in compressed data library 118 at very high speeds for transfer to a reception system 200 of a user upon request. For more details on this configuration see Ohrenstein, "Supercomputers Seek High Throughput and Expandable Storage", Computer Technology Review, pp. 33-39 April 1990.

The use of an HPPI controller allows file placement onto multiple mass storage devices of the compressed data library 118 with a minimum of overhead. Database management software controls the location and tracking of the compressed data library 118 which can be located across multiple clusters of file servers connected together by one or more high speed networks over multiple systems.

The transmission system 100 of the present invention may also preferably include library access/interface means for

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receiving transmission requests to transmit items and for retrieving formatted data blocks stored in the compressed data library 118 corresponding to the requests from users. The compressed audio and/or video data blocks, along with any of the information about the item stored in the compressed data library 118 may be accessed via library access interface 121. The library access interface 121 receives transmission requests either directly from the users or indirectly by remote order processing and item database 300. The transmission format means 119 receives the request and retrieves the composite formatted data block of the requested item stored in compressed data library 118 and converts the compressed formatted data block into a format suitable for transmission. The requested item is then sent to the user via the transmitter 122 or directly via interface 121.

In a preferred embodiment of the present invention, customer access of an item stored in compressed data library 118 via the library access interface 121 may be performed in various ways. The methods of requesting a stored item are analogous to making an airline reservation or transferring funds between bank accounts. Just as there are different methods available for these processes it is desirable to have several ordering methods available to the users of the system of the present invention. For example, telephone tone decoders and voice response hardware may be employed. Additionally, operator assisted service or user terminal interfaces may be used.

Customer access via telephone tone decoders and voice response hardware is completely electronic and may preferably be performed between a system user and a computer order entry system. The user may obtain help in ordering an item from a computer synthesized voice. With such an access method, the user will normally be accessing a dynamic catalog to assist them. Confirmation of selections and pricing information may preferably be given to the user prior to completion of the transaction.

This process of access, performed by remote order processing and item database configuration 300, shown in FIG. 1c, preferably includes the following steps, shown in flowchart 3000 of FIG. 3. First, the user calls the system access number (step 3010). Upon successfully dialing the system access number, the user receives instructions from the system (step 3020). The instructions may preferably include steps the user must take in order to place an order. Preferably, the instructions may be bypassed by the experienced user who knows how to place an order.

The user then enters a customer ID code by which the system accesses the user's account, and indicates to the system that the user is a subscriber of the system (step 3030). In response to the user entering his ID code in step 3030 the system confirms whether the user is in good standing (step 3040). If the user is in good standing, the system queues the user to input his request (step 3050).

The user request may preferably be made from a catalog sent to each of the subscribers of the system. The user will preferably identify his choice and enter the corresponding identification code of the item (step 3060). The system then preferably confirms the selection that the user has made and informs the user of the price of the selection (step 3070).

The user then indicates whether the confirmation performed in step 3070 is correct (step 3080). If the confirmation performed in step 3070 is correct, the user so indicates and then inputs a desired delivery time and delivery location (step 3090).

If the confirmation performed in step 3070 does not result in the selection desired by the user, the user re-inputs the

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item identification code in step 3060 and the confirmation steps 3070 and 3080 are repeated. Therefore, proper selection of the selected item is insured. Once there is confirmation, the user enters the playback time and destination in step 3090.

The user then preferably confirms that the order is correct (step 3100). The confirmation performed in step 3100 includes confirmation of the entire transaction including the selected item, the selected time of playback, and the location of playback. The transaction is then completed and the request is placed on a transmission queue at the appropriate compressed data library 118 (step 3110).

Access by the users via operator assisted service includes telephone operators who answer calls from the users. The operators can sign up new customers, take orders, and help with any billing problems. The operators will preferably have computer terminals which give them access to account information and available program information. Operators can also assist a user who does not know a title by looking up information stored in files which may contain the program notes, as described above. Once the chosen program is identified, the operator informs the user of the price. After the user confirms the order, the user indicates the desired delivery time and destination. The operator then enters the user request into the system. The request is placed in the transmission queue.

Access by a user terminal interface method provides the user with access from various terminals including personal computers, and specialized interfaces built into the reception system 200 for the user. Such access allows a user to do a search of available programs from a computer screen. This process involves the steps 4000 shown in FIG. 4.

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention. In the preferred method of FIG. 4, the user first logs onto the user terminal interface (step 4010). After the user logs on, the user may preferably select a desired item by searching the database of available titles in the library system control computer 1123 or any remote order processing and item database 300 (step 4020). The search may preferably be performed using the database containing the program notes, described above with respect to FIGS. 2a and 2b. It is possible to process orders and operate a database of available titles at multiple locations remote of the source material library 111. Users and order processing operators may preferably access such remote systems and may place transmission requests from these systems. Orders placed on these systems will be processed and distributed to the appropriate libraries. After the desired item is found, the user selects the item for transmission at a specific time and location (step 4030).

To complete an order, the remote order processing and item database 300 preferably connects to the compressed data library 118 of choice via the library access interface 121 and communicates with the library system control computer 1123. Preferably the user's account ID, identification of the item for transmission and the chosen destination for the item are communicated. Through employment of distributed order processing systems of this type many orders may be processed with minimal library overhead.

All transmission requests from the access methods are placed into a transmission queue managed by the library system control computer 1123. This queue is managed by a program that controls the distribution of the requested items to the reception system 200 of the user. The queue manager program also operates in the system control computer and keeps track of the user ID, the chosen program and price, the

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user channel type, the number of requests for a given program, the latest delivery time, and the compressed data library media type (for example, high speed or low speed). From this information, the queue manager program makes best use of the available distribution channels and media for efficient transmission and storage of the requested items.

The queue manager program also manages the file transmission process for multiple requests for a single file, stored in the compressed data library 118. During a given time period, the queue manager program will optimize access to the compressed data library 118, wherever possible it will place the data on multiple outputs for simultaneous transmission to more than one requesting user.

The conversion performed by transmission data converter 119 encodes the data for the transmission channel. The transmission data converter transfers the desired segments of data from the compressed data library 118 onto the communication channel which is used to deliver the data to the reception system 200.

The transmission system 100 of the present invention preferably further includes transmitter means 122, coupled to the compressed data library 118, for sending at least a portion of a specific file to at least one remote location. The transmission and receiving system of the present invention preferably operates with any available communication channels. Each channel type is accessed through the use of a communications adaptor board or processor connecting the data processed in the transmission format converter 119 to the transmission channel.

A preferred embodiment of the present invention also includes means by which to access users via common access lines. These may include standard telephone, ISDN or B-ISDN, microwave, DBS, cable television systems, MAN, high speed modems, or communication couplers. Metropolitan Area Networks (MANs) which are common carrier or private communication channels are designed to link sites in a region. MANs are described by Morreale and Campbell in "Metropolitan-area networks" (IEEE Spectrum, May 1990 pp. 40-42). The communication lines are used to transmit the compressed data at rates up to, typically, 10 Mb/sec.

In order to serve a multitude of channel types, a preferred embodiment of the present invention includes a multitude of output ports of each type connected to one or more computers on the transmission and receiving system. The management of transmission is then distributed. That is, the computer controlling the transmission queue tells the transmission encoding computer its task and then the task is executed by the transmission encoding computer, independent of the transmission queue computer. The transmission queue computer provides the data for transmission by the file server which also distributes to other transmitters located in the same or other transmission encoding computers.

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention. The queue manager program, in the distribution process, preferably confirms availability of an item from the compressed data library 118 and logically connects the item stored in compressed data library 118 to the communications controller, illustrated in FIG. 2a (step 5010). After availability is confirmed in step 5010, the data awaits transmission by the transmitter 122.

After availability is confirmed in step 5010, the communications controller preferably makes the physical connection to the reception system 200 of the user (step 5020). This is normally done by dialing the receiving device of the user. The reception system 200 preferably answers the incoming call and confirms the connection (step 5030).

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Once connected to the reception system 200, in steps 5020 and 5030, the data stored in compressed data library 118 is preferably transferred in data blocks from the compressed data library 118 to the communications controller (step 5040). The data blocks are buffered by the communications controller. The buffered data is sent down the communications channel to the reception system 200 by transmitter 122 (step 5050).

The transmitter 122 places the formatted data onto the communications channel. This is an electrical conversion section and the output depends upon the chosen communication path. The signal is sent to the reception system 200 in either a two way or a one way communication process. In a standard telephone connection, the transmitter 122 is preferably a modem. When using an ISDN channel, the transmitter 122 is preferably a data coupler.

In a preferred embodiment of the present invention, many forms of communication channels may be employed. Distribution of information is by common carrier communication channels whenever possible. These channels include common telephone service, ISDN and Broadband ISDN, DBS, cable television systems, microwave, and MAN.

In order that reception is performed efficiently, the reception system 200 confirms reception of the initial data block before receiving the remaining data blocks whenever possible (step 5060). After all data blocks have been received and reception is confirmed, the communications controller breaks the physical connection to the reception system 200 (step 5070). Then, confirmation of the transmission is sent to the queue manager (step 5080). Finally, the queue manager updates the list and sends the information to the billing program, which updates the account of the user (step 5090).

When item distribution occurs through a broadcasting method such as a communications satellite, the process is one way, with ongoing reception not being confirmed by the reception system 200. In these situations, some further redundancy is included by transmission formatter 122 with the data blocks for error correction processing to be performed in the reception system 200. In such one way communication situations, the queue manager program running in library system control computer 1123 confirms reception, via telephone line connection for example, to the reception system 200 after distribution. This should occur prior to updating the user's account and the dispatch lists.

The real time output signals are output to a playback system such as an audio amplifier and/or television. This output may also be sent to an audio/video recorder for more permanent storage. Moreover, in the preferred embodiment only non-copy protected data can be recorded on an audio/video recorder. Any material which is copy protected will be scrambled at the video output in a way which makes it viewable on a standard audio/video receiver but does not allow for recording of the material.

The reception system 200 has playback controls similar to the controls available on a standard audio/video recorder. These include: play, fast forward, rewind, stop, pause, and play slow. Since items are preferably stored on random access media, the fast forward and rewinding functions are simulations of the actual events which occur on a standard audio/video recorder. Frames do not tear as on an audio/video recorder, but in fast play modes they go by very quickly.

The library access interface 121 in the reception system 200 preferably includes a title window where a list of available titles are alphabetically listed. This window has two modes: local listing of material contained within the

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library system control computer 1123, and library listing for all available titles which may be received from the available, remotely accessible libraries. The titles listed in this window are sent from the database on the library system control computer 1123 or the remote order processing and item database 300.

The system may also preferably include dispatching control software which receives input from the remote order processing and item database 300 and sends distribution requests to the distribution systems. In instances where not all items are contained in each of the compressed data libraries 118, the dispatching software will keep a list of the available titles in a particular compressed data library 118. The dispatch software may also preferably coordinate network traffic, source material library 111 utilization, source material library 111 contents, and connection costs. By proper factoring of these variables, efficient use of the available distribution channels may be achieved.

FIG. 6 illustrates a block diagram of a preferred implementation of the reception system 200 according to the present invention. The reception system 200 is responsive to user requests for information stored in source material library 111. The reception system 200 includes transceiver 201 which receives the audio and/or video information transmitted by transmitter 122 of the transmission system 100. The transceiver 201 automatically receives the information from the transmitter 122 as compressed formatted data blocks.

The transceiver 201 is preferably connected to receiver format converter 202. The receiver format converter 202 converts the compressed formatted data blocks into a format suitable for playback by the user in real time.

In the reception system 200 of the present invention, the user may want to play back the requested item from the source material library 111 at a time later than when initially requested. If that is the case, the compressed formatted data blocks from receiver format converter 202 are stored in storage 203. Storage 203 allows for temporary storage of the requested item until playback is requested.

When playback is requested, the compressed formatted data blocks are sent to data formatter 204. Data formatter 204 processes the compressed formatted data blocks and distinguishes audio information from video information.

The separated audio and video information are respectively decompressed by audio decompressor 209 and video decompressor 208. The decompressed video data is then sent simultaneously to converter 206 including digital video output converter 211 and analog video output converter 213. The decompressed audio data is sent simultaneously to digital audio output converter 212 and analog audio output converter 214. The outputs from converters 211–214 are produced in real time.

The real time output signals are output to a playback system such as a TV or audio amplifier. They may also be sent to an audio/video recorder of the user. By using the reception system 200 of the present invention, the user may utilize the stop, pause, and multiple viewing functions of the receiving device. Moreover, in a preferred embodiment of the present invention, the output format converters may be connected to a recorder which enables the user to record the requested item for future multiple playbacks.

FIG. 7 is a flow chart 400 of a preferred method of distribution of the present invention. The distribution method is preferably responsive to requests identifying information to be sent from the transmission system 100 to remote locations. Method 400 assumes that the items have already been stored in compressed data library 118.

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As illustrated in FIG. 7, the first step of the distribution method 400 involves retrieving the information for selected items in the source material library 111, upon a request by a user of the distribution system (step 412). This is analogous to taking books off of a shelf at the local public library after the person has decided that he or she would like to read them.

After the information for the selected items is retrieved in step 412, the distribution method 400 of the present invention further comprises the step of processing the information for efficient transfer (step 413). The processing performed in step 413 preferably includes assigning a unique identification code to the retrieved information performed by identification encoder 112, shown and described with respect to FIG. 2a (step 413a). The processing also preferably includes placing the retrieved information into a predetermined format as formatted data by converter 113 (step 413b), and placing the formatted data into a sequence of addressable data blocks by ordering means 114 (step 413c).

Processing step 413 also includes compressing the formatted and sequenced data performed by data compressor 116 (step 413d), and storing as a file the compressed sequenced data received from the data compression means with the unique identification assigned by the identification encoding means (step 413e).

After the information is processed for efficient transfer, in substeps 413a–e of step 413, the distribution method 400 of the present invention preferably includes the step of storing the processed information in a compressed data library (step 414). Preferably, the compressed data library is analogous to compressed data library 118, described with respect to FIG. 2a.

After the information is stored in a compressed data library 118, the transmission and receiving system preferably waits to receive a transmission request (step 415). Upon receiving a transmission request, from transmission system 100, the compressed formatted data is preferably converted for output to a reception system 200, selected by the user. The information is preferably transmitted over an existing communication channel to a reception system 200, and is received by that system (step 417). When the information is received in step 417, it is preferably formatted for the particular type of reception system 200 to which the information is sent.

The received information is preferably buffered (step 418) by a storage means analogous to element 203 shown in FIG. 3. The information is preferably buffered so that it may be stored by the user for possible future viewings. The requested information is then played back to the reception system 200 of the user at the time requested by the user (step 419).

FIGS. 8a–8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system. FIG. 8a shows the block structure of video data where a video frame 812 is composed of a plurality of video samples 811, and a second of video 813 is composed of a plurality of video frames 812.

FIG. 8b shows the block structure of audio data where an audio data frame 822 is composed of a plurality of audio samples 821, and a second of audio 823 is composed of a plurality of audio data frames 822. FIG. 8c shows the block structure of a data frame 832 composed of a plurality of data bytes 831. The combination of the audio frames 812, video frames 822, and data frames 832 comprise the elements of a single item. FIG. 8d shows a block representation of for three illustrative items which may be stored in the source

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material library 111. Each of items 1–3 contains its own arrangement of video frames 812, audio frames 822, and data frames 832.

FIG. 8e shows methods of distribution to reception systems 200 with both multiplexed and non-multiplexed signal paths, both addressed and non-addressed blocks of items. A block of an item may be an entire item or, alternatively, may be only a portion of an item, as selected by a user. Further, the blocks may be composed of either compressed, partially compressed, or fully decompressed data, as required by the configuration of the reception system 200.

As shown in FIG. 8e, the same block, for example, block 1, may be simultaneously transmitted over different distribution channels. The blocks when transmitted over one of the distribution channels may have receiver addresses appended to the blocks or the reception system 200 may have been preconfigured to receive the blocks comprising data frames for particular items from the active distribution channel.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with the true scope and spirit of the invention being indicated by the following claims.

What is claimed is:

1. A communication system comprising:
 - a transmission system at a first location in data communication with a reception system at a second location, wherein said transmission system comprises
 - a sequence encoder,
 - an identification encoder, and
 - a compressed data library in data communication with said identification encoder,
 wherein said identification encoder gives items in said compressed data library a unique identification code; and
 - wherein said reception system comprises
 - a transceiver in data communication with said transmission system,
 - a storage device in data communication with said transceiver,
 - user playback controls in data communication with said storage device,
 - a digital compressor in data communication with said storage device, and
 - a playback device in data communication with said digital decompressor.
2. A communication system as recited in claim 1, wherein said transmission system further comprises:
 - a source material library storing a portion of at least one data file.
3. A communication system as recited in claim 2, wherein said transmission system further comprises:
 - a converter having a data input in data communication with said source material library and a digital data output.
4. A communication system as recited in claim 3, wherein said transmission system further comprises:
 - a data compressor in data communication with said digital data output of said converter.
5. A communication system as recited in claim 1, wherein said transmission system further comprises:
 - a compressed data formatting device in data communication with said identification encoder.
6. A communication system as recited in claim 1, wherein said identification encoder allows entry of a popularity code.

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7. A communication system as recited in claim 1, wherein said sequence encoder transforms digital data blocks into a group of addressable data blocks.

8. A communication system as recited in claim 1, wherein said transmission system further comprises:

- a transmitter in data communication with said compressed data library, wherein

- said transmitter sends at least a portion of a compressed data file to said reception system.

9. A communication system as recited in claim 1, further comprising:

- a user request interface in data communication with said transmission system,

- wherein said user request interface enables a user to make a request for at least a portion of a data file.

10. A communication system as recited in claim 9, wherein said reception system comprises said user request interface.

11. A communication system as recited in claim 1, wherein said reception system further comprises:

- a receiver format converter in data communication with said transceiver, wherein

- said receiver format converter converts at least a portion of a data file into a format suitable for playback by a user.

12. A communication system as recited in claim 1, wherein said reception system further comprises:

- an output data converter in data communication with said digital decompressor.

13. A communication system as recited in claim 1, wherein said storage device stores at least a portion of a data file.

14. A communication system as recited in claim 13, wherein said storage device is a temporary storage device.

15. A communication system as recited in claim 1, wherein said storage device stores an entire data file.

16. A communication system as recited in claim 15, wherein said storage device is a temporary storage device.

17. A communication system comprising:

- a transmission system at a first location in data communication with a reception system at a second location, wherein said transmission system comprises

- a source material library,

- an identification encoder in data communication with said source material library,

- a converter having a data input in data communication with said source material library and a digital data output,

- a sequence encoder in data communication with said digital data output,

- a digital data compressor in data communication with said digital data output,

- a compressed data formatting device in data communication with said digital data compressor,

- a compressed data library in data communication with said compressed data formatting device, and

- a transmitter in data communication with said compressed data library; and wherein said reception system comprises

- a transceiver in data communication with said transmission system,

- a receiver format converter in data communication with said transceiver,

- a storage device in data communication with said receiver format converter,

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user playback controls in data communication with said storage device,

a digital decompressor in data communication with said receiver format converter, and

an output data converter in data communication with said digital decompressor.

18. A communication system as recited in claim 17, wherein said digital data compressor is in data communication with said sequence encoder.

19. A communication system as recited in claim 17, wherein said compressed data formatting device is in data communication with said identification encoder.

20. A communication system as recited in claim 17, further comprising:

a user request interface in data communication with said transmission system.

21. A communication system as recited in claim 20, wherein said reception system comprises said user request interface.

22. A communication system as recited in claim 17, wherein said storage device stores at least a portion of a data file.

23. A communication system as recited in claim 17, wherein said storage device stores an entire data file.

24. A communication system as recited in claim 17, wherein said transceiver transmits a user request for a data file to said transmission system and receives the entire data file as compressed data blocks from said transmission system.

25. A communication system as recited in claim 17, wherein said transceiver transmits a user request for at least a portion of a data file to said transmission system and receives the portion of the data file as compressed data blocks from said transmission system.

26. A communication system as recited in claim 17, wherein said output data converter is in data communication with said storage device.

27. A communication system comprising:

a transmission system at a first location in data communication with a reception system at a second location, wherein said transmission system comprises:

an identification encoder, wherein said identification encoder allows entry of a popularity code; and

a compressed data library in data communication with said identification encoder; and

wherein said reception system comprises

a transceiver in data communication with said transmission system,

a storage device in data communication with said transceiver,

user playback controls in data communication with said storage device,

a digital decompressor in data communication with said storage device, and

a playback device in data communication with said digital decompressor.

28. A communication system as recited in claim 27, wherein said transmission system further comprises:

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a source material library storing a portion of at least one data file.

29. A communication system as recited in claim 28, wherein said transmission system further comprises:

a converter having a data input in data communication with said source material library and a digital data output.

30. A communication system as recited in claim 29, wherein said transmission system further comprises:

a data compressor in data communication with said digital data output of said converter.

31. A communication system as recited in claim 27, wherein said transmission system further comprises:

a compressed data formatting device in data communication with said identification encoder.

32. A communication system as recited in claim 27, wherein said transmission system further comprises a sequence encoder.

33. A communication system as recited in claim 32, wherein said sequence encoder transforms digital data blocks into a group of addressable data blocks.

34. A communication system as recited in claim 27, wherein said transmission system further comprises:

a transmitter in data communication with said compressed data library, wherein said transmitter sends at least a portion of a compressed data file to said reception system.

35. A communication system as recited in claim 27, further comprising:

a user request interface in data communication with said transmission system, wherein

said user request interface enables a user to make a request for at least a portion of a data file.

36. A communication system as recited in claim 35, wherein said reception system comprises said user request interface.

37. A communication system as recited in claim 27, wherein said reception system further comprises:

a receiver format converter in data communication with said transceiver, wherein said receiver format converts at least a portion of a data file into a format suitable for playback by a user.

38. A communication system as recited in claim 27, wherein said reception system further comprises:

an output data converter in data communication with said digital decompressor.

39. A communication system as recited in claim 27, wherein said storage device stores at least a portion of a data file.

40. A communication system as recited in claim 27, wherein said storage device stores an entire data file.

41. A communication system as recited in claim 39, wherein said storage device is a temporary storage device.

42. A communication system as recited in claim 40, wherein said storage device is a temporary storage device.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,144,702
DATED : November 7, 2000
INVENTOR(S) : Paul Yurt et al.

Page 1 of 1

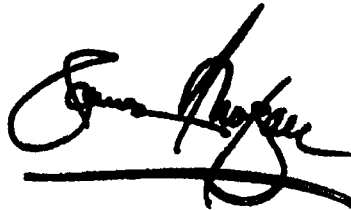
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 19,

Line 44, replace "compressor" with -- decompressor --.

Signed and Sealed this

Fifteenth Day of April, 2003

A handwritten signature in black ink, appearing to read "James E. Rogan", with a long horizontal flourish extending from the bottom of the signature.

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

EXHIBIT

11



US006002720A

United States Patent

[19]

[11] **Patent Number:** **6,002,720****Yurt et al.**[45] **Date of Patent:** **Dec. 14, 1999**[54] **AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM**[75] Inventors: **Paul Yurt**, Scottsdale, Ariz.; **H. Lee Browne**, Greenwich, Conn.[73] Assignee: **H. Lee Browne, D/B/A Greenwich Information Technologies LLC**, Greenwich, Conn.[21] Appl. No.: **08/630,590**[22] Filed: **Apr. 10, 1996**

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Related U.S. Application Data

[63] Continuation of application No. 08/133,982, Oct. 8, 1993, Pat. No. 5,550,863, which is a continuation of application No. 07/862,508, Apr. 2, 1992, Pat. No. 5,253,275, which is a continuation of application No. 07/637,562, Jan. 7, 1991, Pat. No. 5,132,992.

[51] **Int. Cl.⁶** **H04N 7/10**[52] **U.S. Cl.** **375/240; 375/259; 375/377; 455/4.2; 348/7; 348/8**[58] **Field of Search** 375/240, 259, 375/295, 316, 377; 348/1, 6-8, 10, 12-14, 17, 384, 385, 387, 470, 473, 906; 379/90.1, 93.08, 93.1, 101.1, 102.1-102.3; 455/2, 3.1, 4.1, 4.2, 5.1, 6.3[56] **References Cited****U.S. PATENT DOCUMENTS**

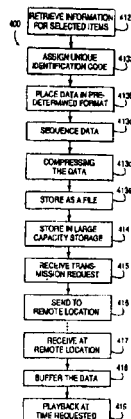
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A system of distributing video and/or audio information employs digital signal processing to achieve high rates of data compression. The compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in less than real time, for later playback and optional recording on standard audio and/or video tape.

11 Claims, 12 Drawing Sheets

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FIG. 1a

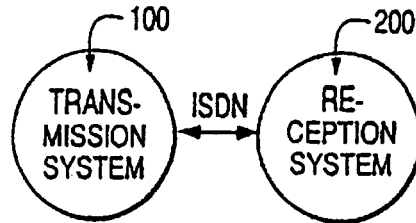


FIG. 1b

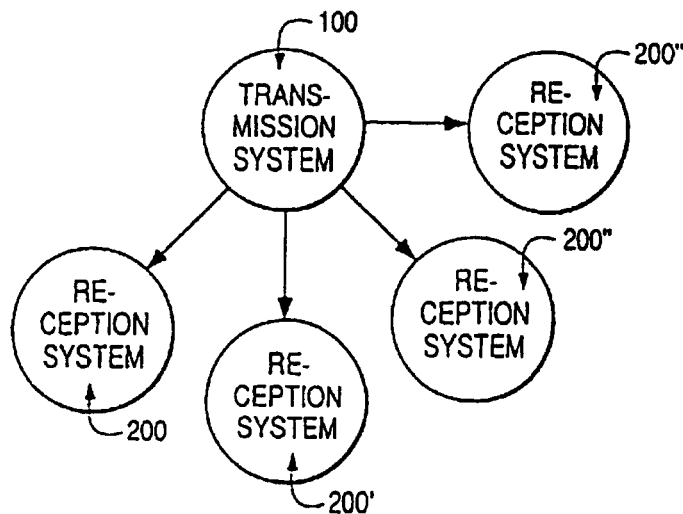
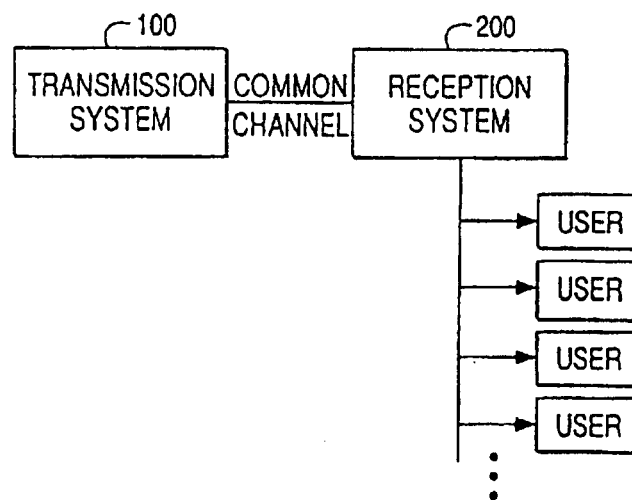
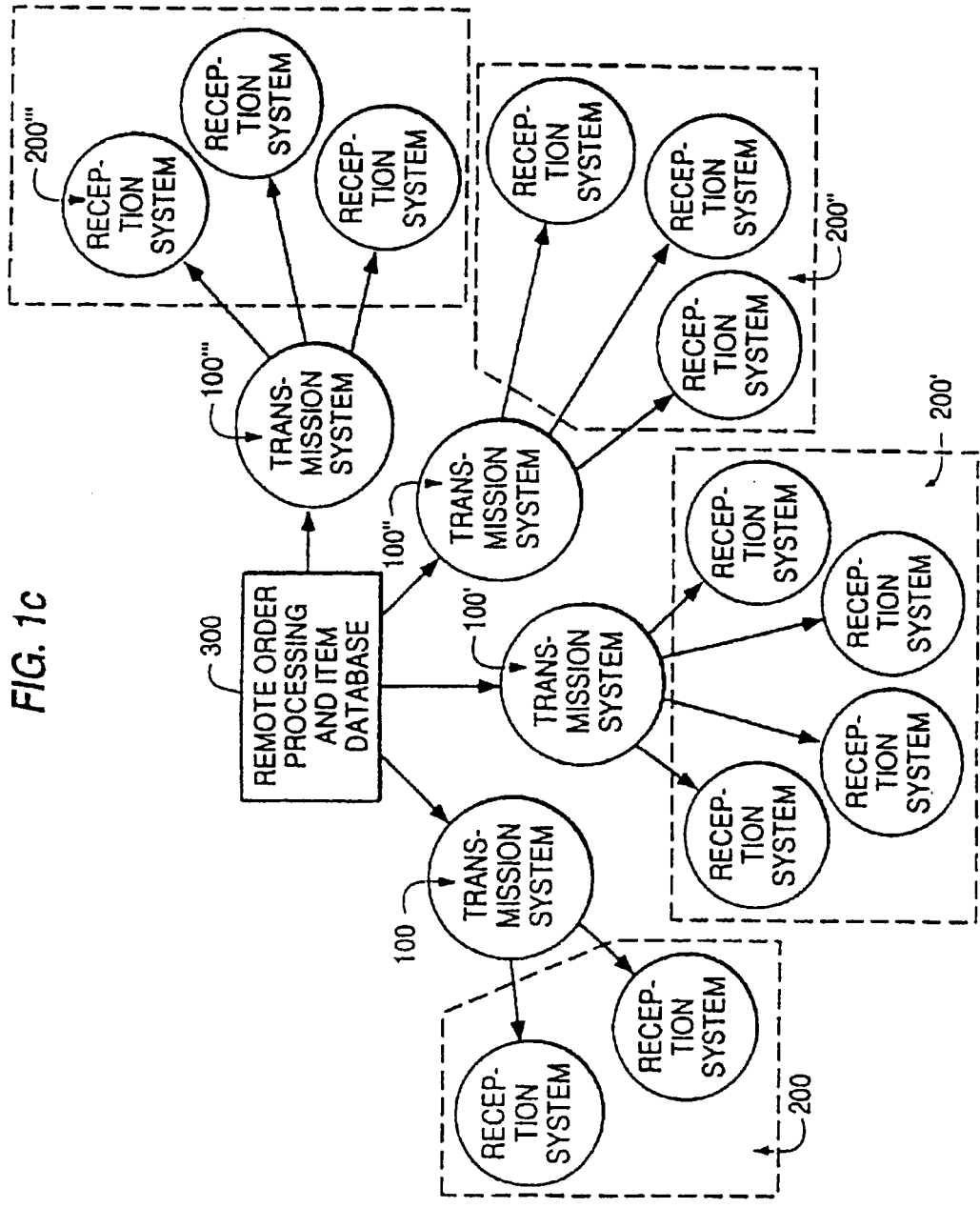


FIG. 1d





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FIG. 1e

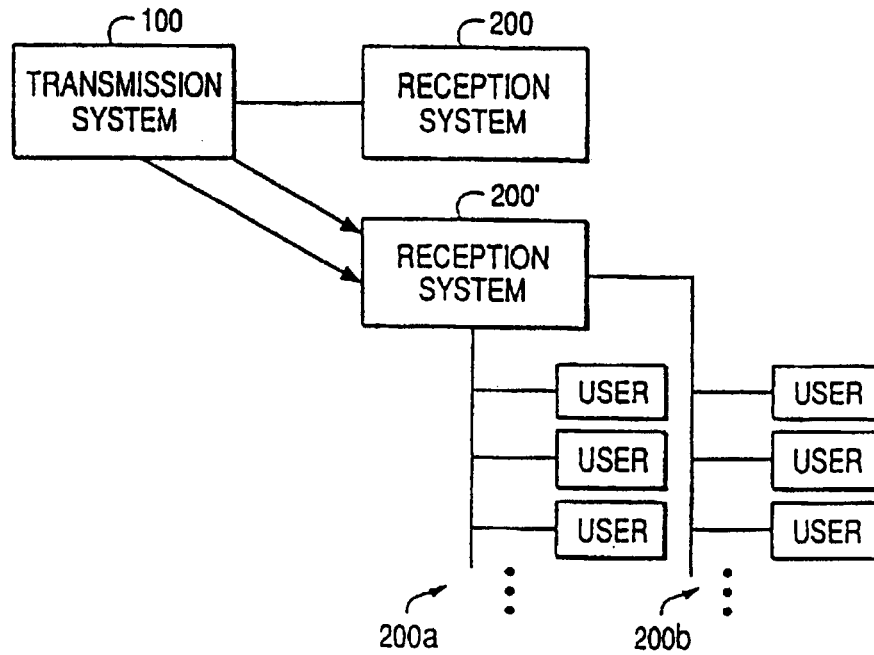
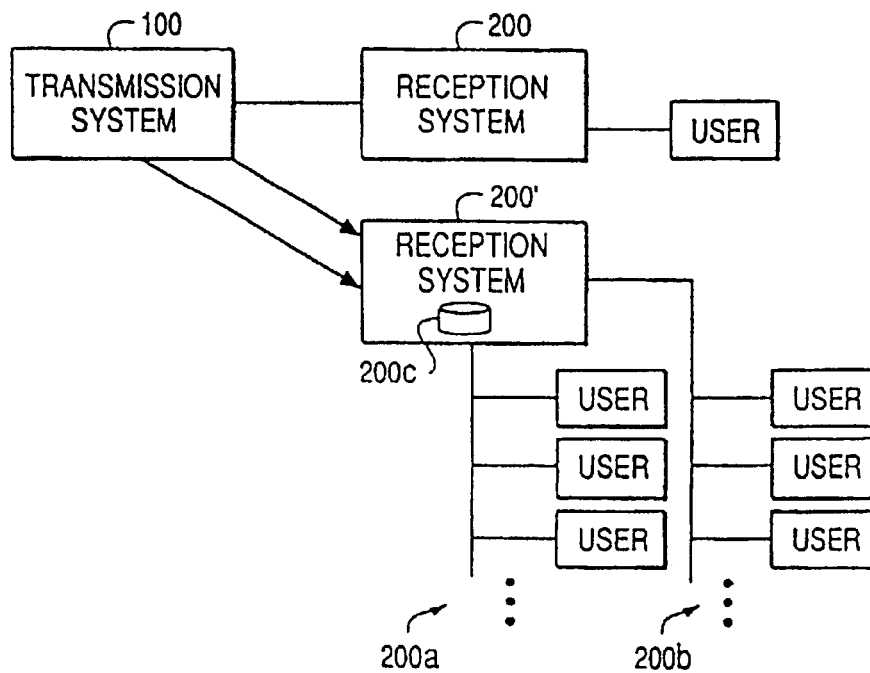


FIG. 1f



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FIG. 1g

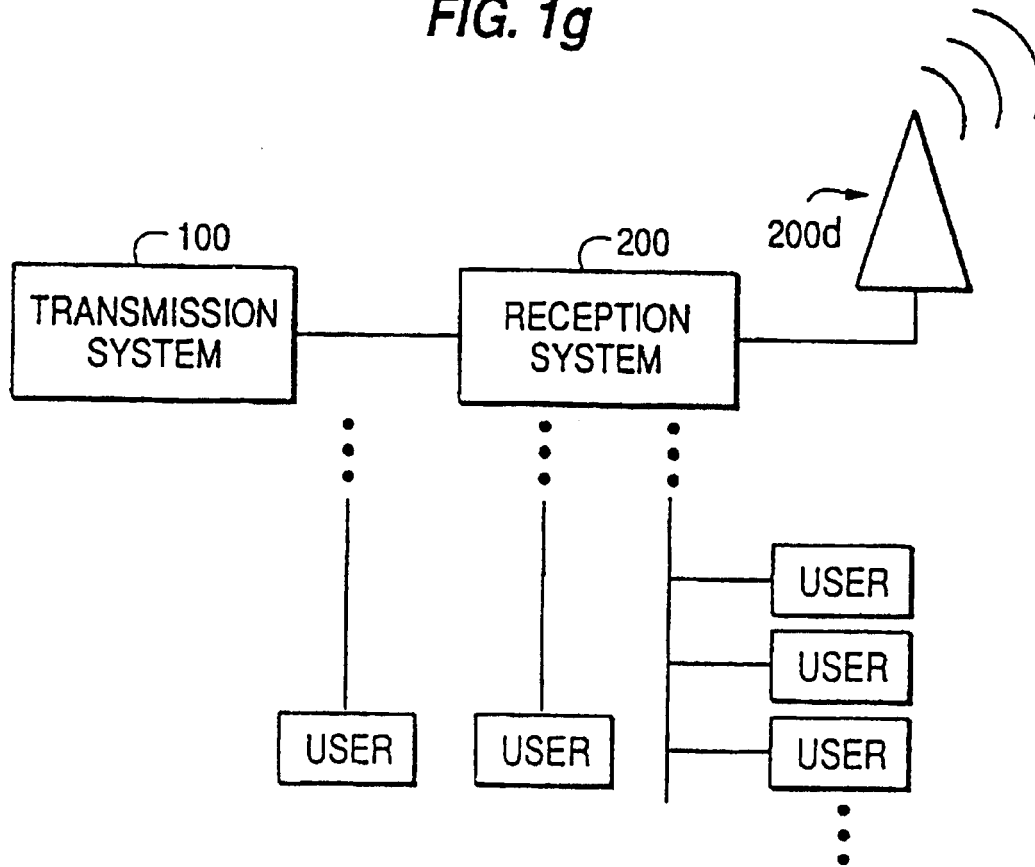
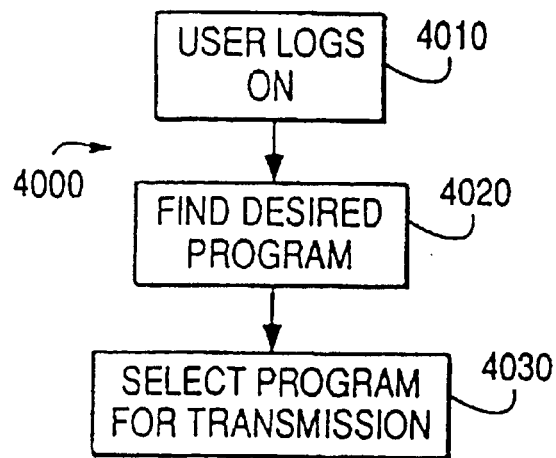


FIG. 4



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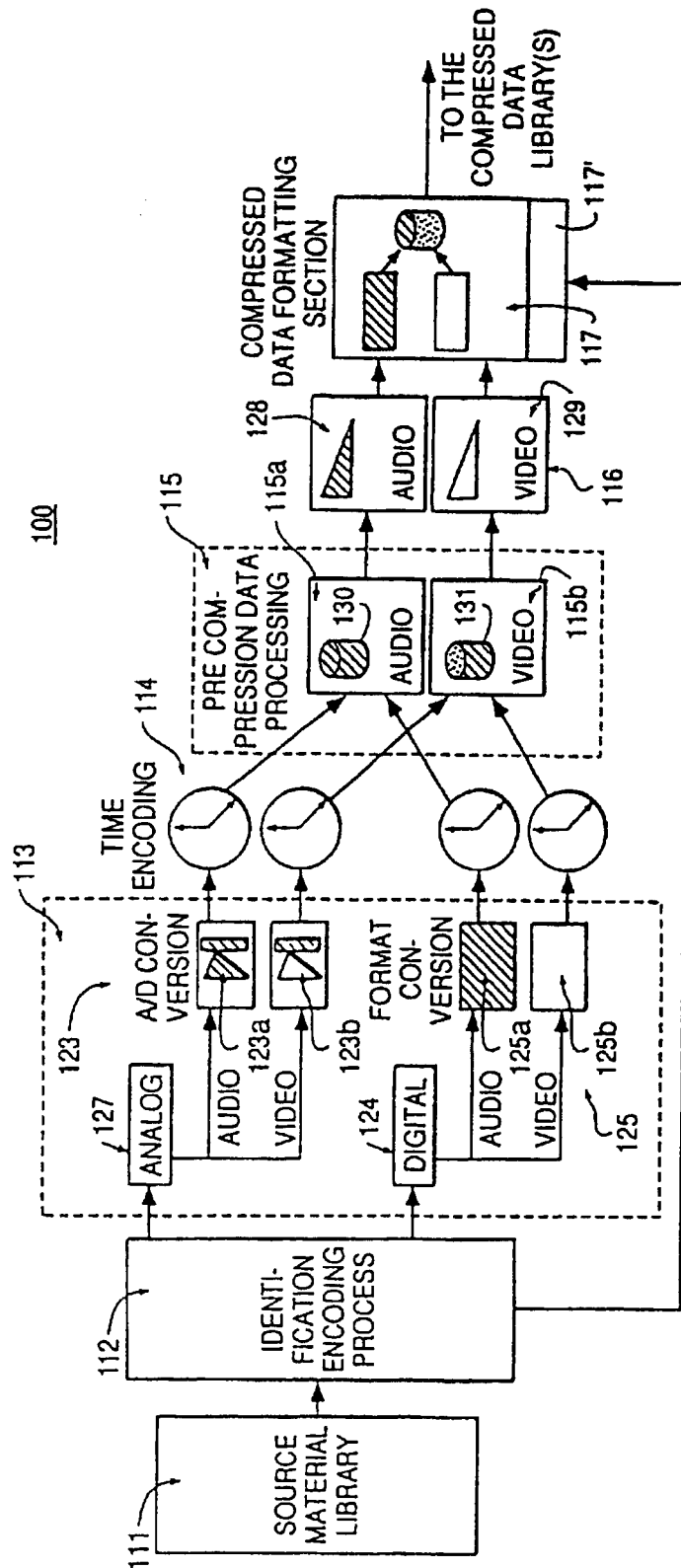


FIG. 2a

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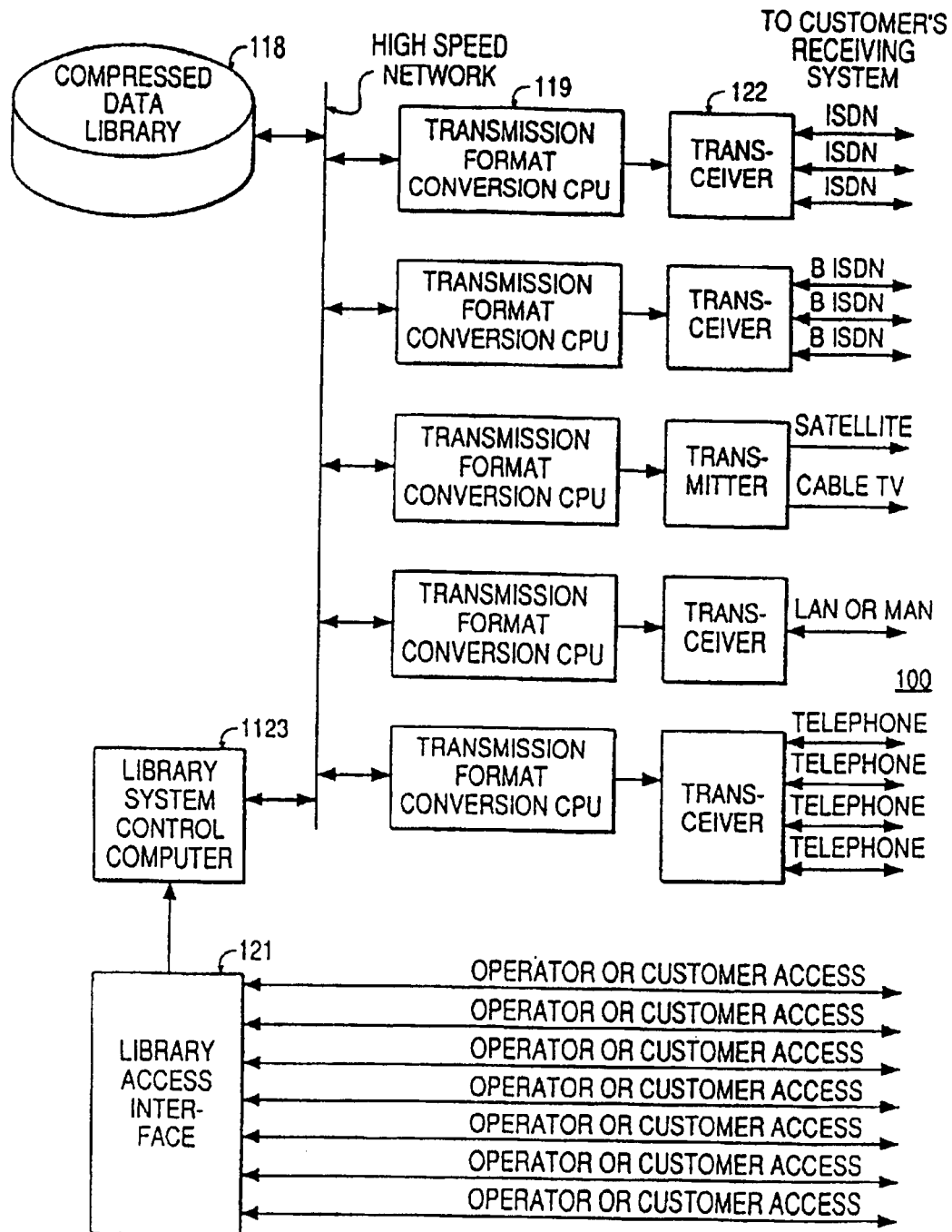


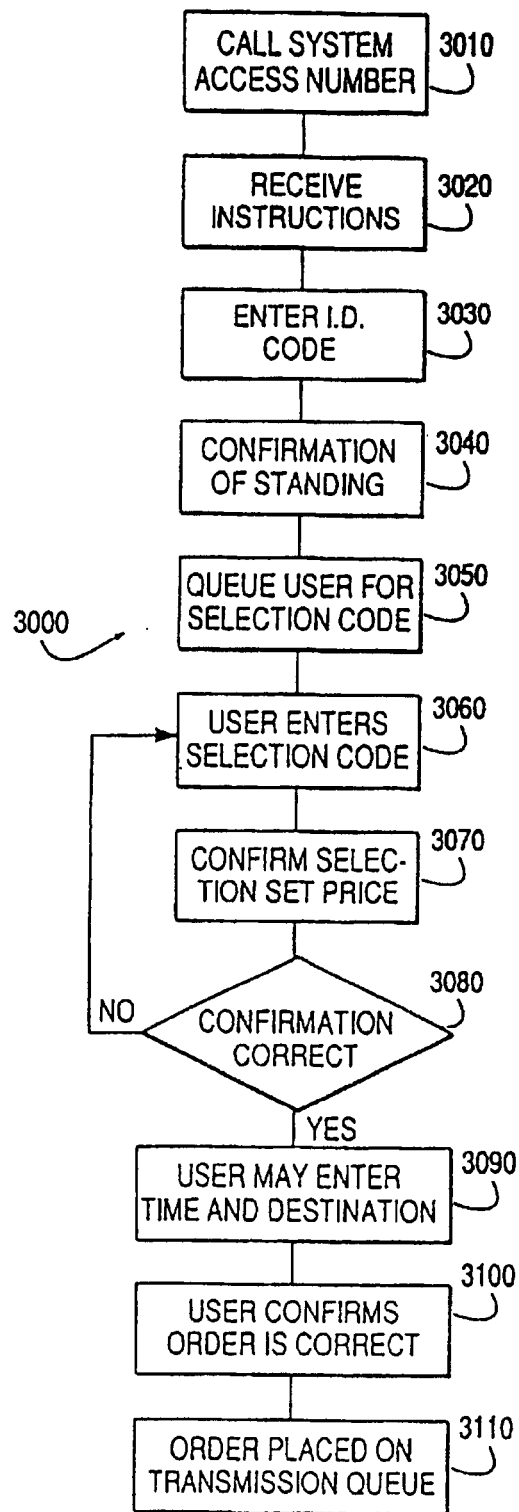
FIG. 2b

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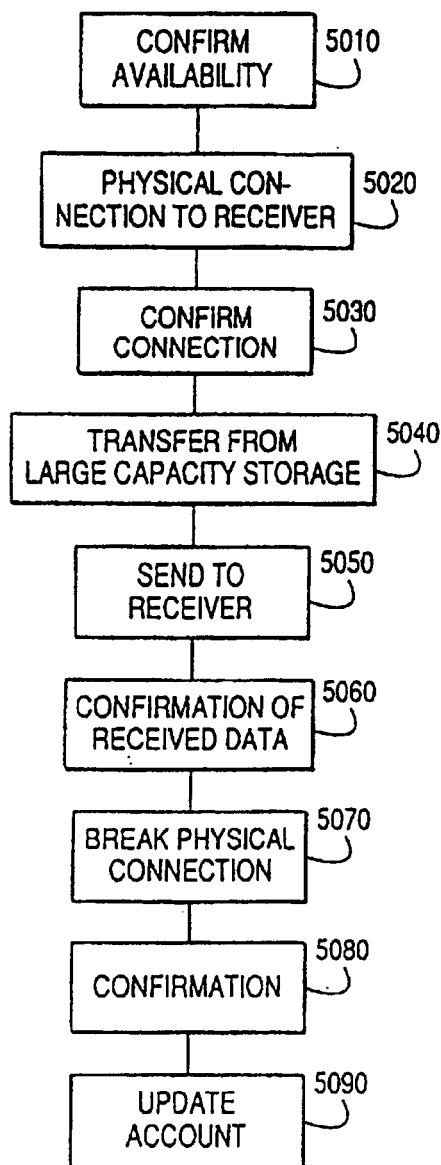


FIG. 5

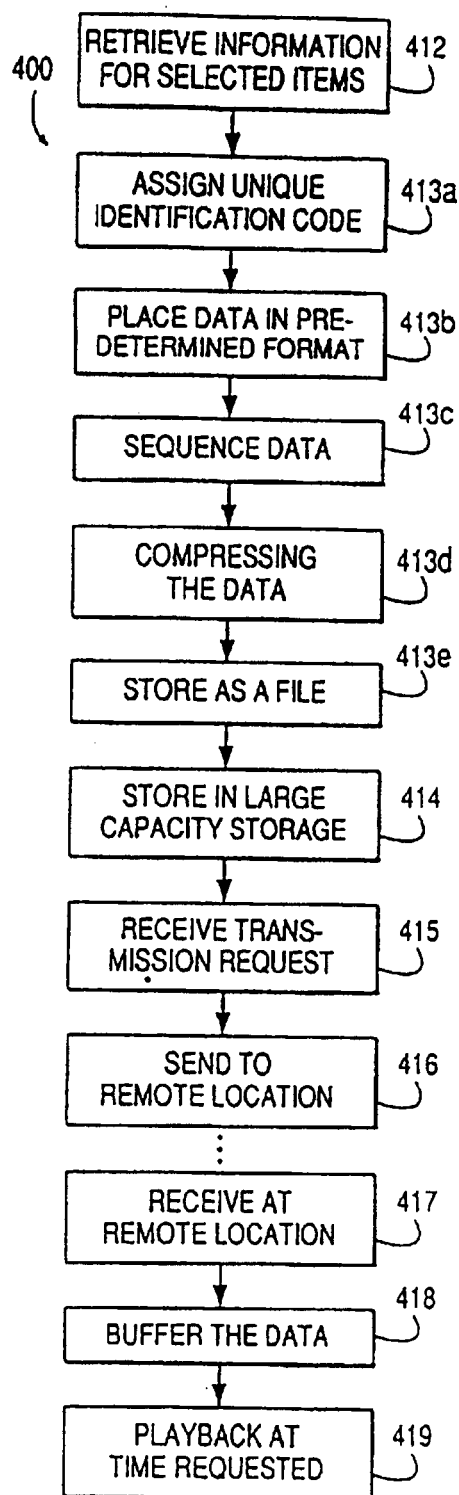


FIG. 7

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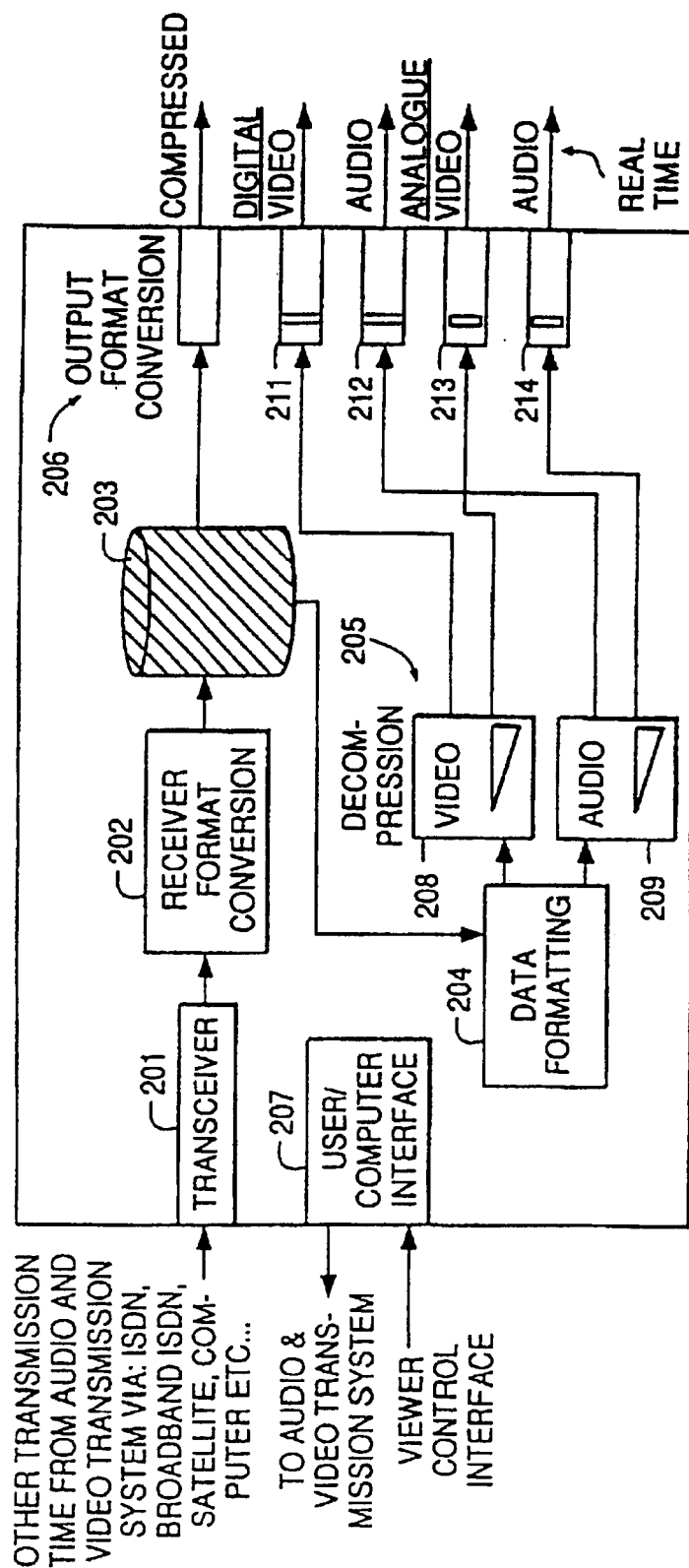


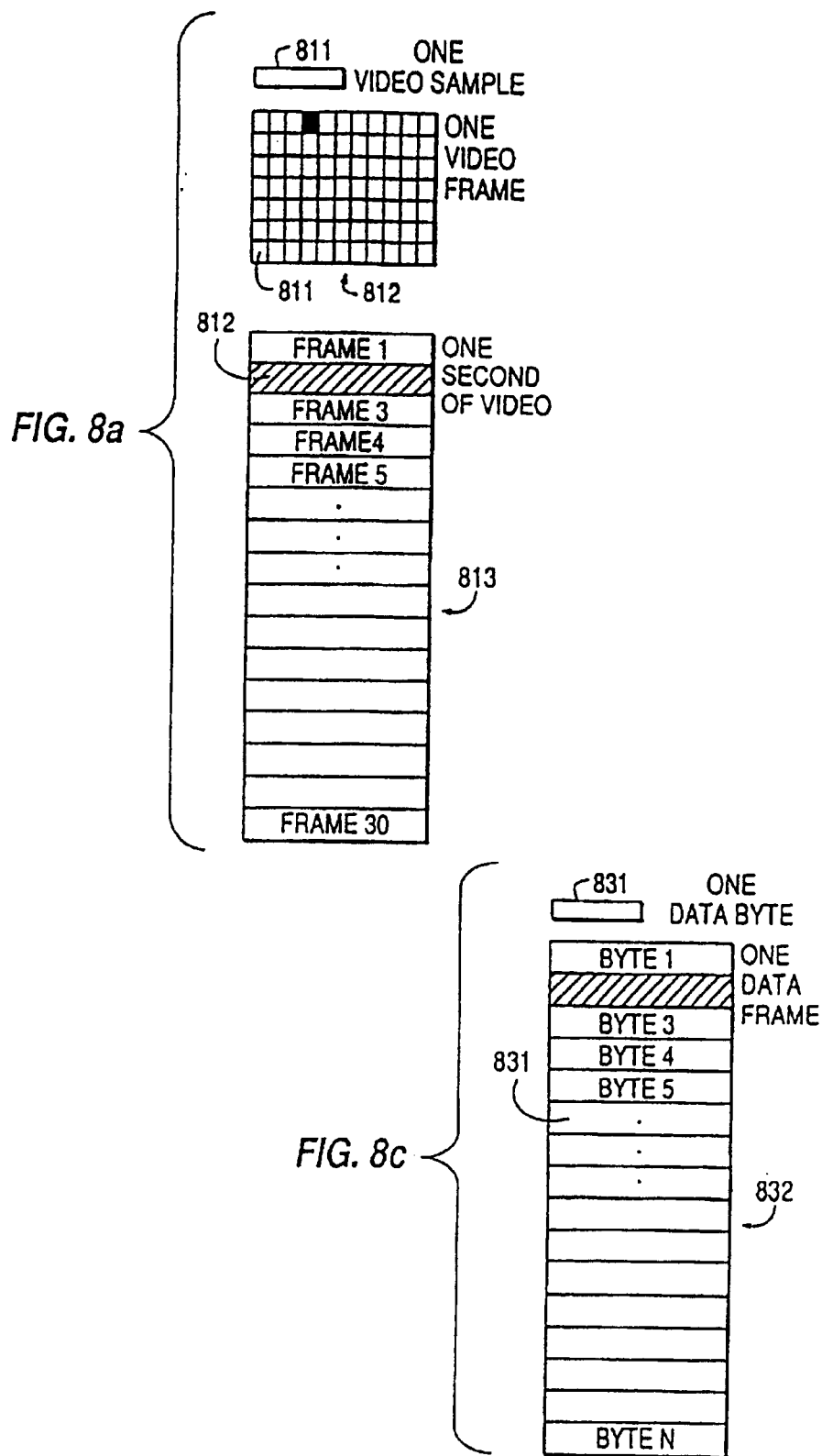
FIG. 6

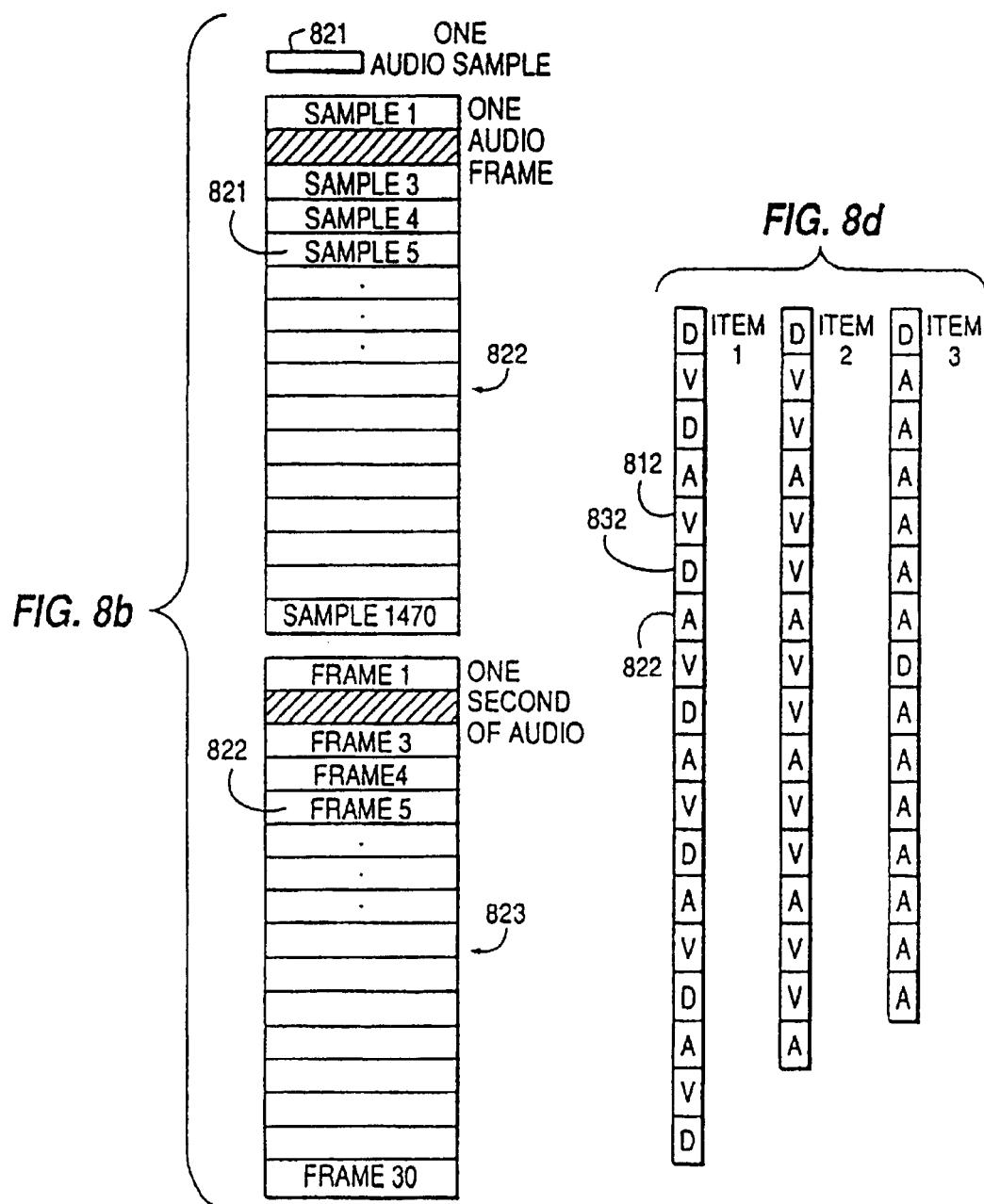
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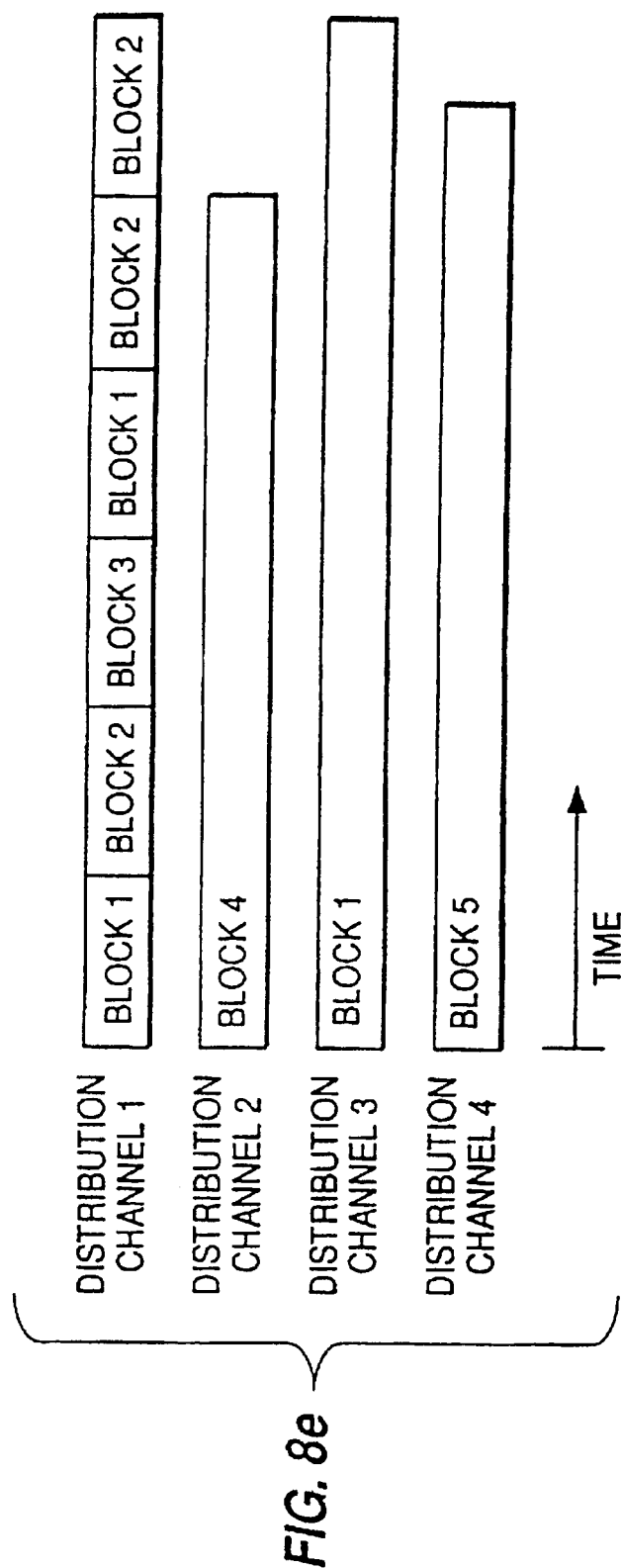


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AUDIO AND VIDEO TRANSMISSION AND RECEIVING SYSTEM

This is a continuation of application Ser. No. 08/133,982, filed Oct. 8, 1993, U.S. Pat. No. 5,550,863 which is a continuation application of prior application Ser. No. 07/862,508 filed Apr. 2, 1992 which issued as U.S. Pat. No. 5,253,275 on Oct. 12, 1993, which is a continuation application of prior application Ser. No. 07/637,562 filed Jan. 7, 1991 which issued as U.S. Pat. No. 5,132,992 on Jul. 21, 1992.

BACKGROUND OF THE INVENTION

The present invention relates generally to an audio and video transmission and receiving system, and more specifically to such a system in which the user controls the access and the playback operations of selected material.

At the present time, only a video cassette recorder (VCR) or a laser disk player (LDP) allow a viewer to enjoy control over selection of particular audio/video material. Using either a VCR or an LDP requires the viewer to obtain a video tape either by rental or by purchase. Remote accessing of the material has not yet been integrated into an efficient system.

Several designs have been developed which provide the viewer with more convenient means of accessing material. One such design is disclosed in U.S. Pat. No. 4,506,387, issued to Walter. The Walter patent discloses a fully dedicated, multi-conductor, optical cable system that is wired to the viewer's premises. While the system affords the viewer some control over accessing the material, it requires that a location designated by the viewer be wired with a dedicated cable. The Walter system further requires the viewer be at that location for both ordering and viewing the audio/video material.

U.S. Pat. No. 4,890,320, issued to Monslow, describes a system which broadcasts viewer selected material to a viewer at a prescribed time. This system is limited in that it requires multiple viewers in multiple locations to view the audio/video material at the time it is broadcast, rather than allowing each viewer to choose his or her own viewing time. The system disclosed in Monslow also does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,590,516, issued to Abraham, discloses a system that uses a dedicated signal path, rather than multiple common carriers, to transmit audio/video programming. The receiver has no storage capability. The system provides for only display functions, which limits viewing to the time at which the material is ordered. Like Monslow, the Abraham system does not allow for the stop, pause, and multiple viewing functions of existing VCR technology.

U.S. Pat. No. 4,963,995, issued to Lang, discloses an audio/video transceiver with the capability of editing and/or copying from one video tape to another using only a single tape deck. Lang does not disclose a system with one or more libraries wherein a plurality of system subscribers may access information stored in the film and tape library or libraries, and play back the selected information at a time and place selected by the subscriber.

It is therefore an object of the present invention to provide a user with the capability of accessing audio/video material by integrating both accessing and playback controls into a system that can use multiple existing communications channels.

It is a further object of the present invention to provide a picture and sound transmission system which allows the user

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to remotely select audio/video material from any location that has either telephone service or a computer.

A still further object of the present invention is to provide a picture and sound transmission system wherein the selected audio/video material is sent over any one of several existing communication channels in a fraction of real time to any location chosen by the user that has a specified receiver.

Another object of the present invention is to provide a picture and sound transmission system wherein the user may play back the selected audio/video material at any time selected by user and retain a copy of the audio/video material for multiple playbacks in the future.

Another object of the present invention is to provide a picture and sound transmission system wherein the information requested by the user may be sent as only audio information, only video information, or as a combination of audio and video information.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

SUMMARY OF THE INVENTION

To achieve the objects in accordance with the purposes of the present invention, as embodied and described herein, the transmission and receiving system for providing information to remote locations comprises source material library means prior to identification and compression; identification encoding means for retrieving the information for the items from the source material library means and for assigning a unique identification code to the retrieved information; conversion means, coupled to identification encoding means, for placing the retrieved information into a predetermined format as formatted data; ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks; compression means, coupled to the ordering means, for compressing the formatted and sequenced data; compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data received from the compression means with the unique identification code assigned by the identification encoding means; and transmitter means, coupled to the compressed data storing means, for sending at least a portion of a specific file to a specific one of the remote locations.

The present invention further comprises a distribution method responsive to requests identifying information to be sent from a transmission system to a remote location, the method comprising the steps of storing audio and video information in a compressed data form; requesting transmission, by a user, of at least a part of the stored compressed information to the remote location; sending at least a portion of the stored compressed information the remote location; receiving the sent information at the remote location; buffering the processed information at the remote location; and playing back the buffered information in real time at a time requested by the user.

Additionally, the present invention comprises a receiving system responsive to a user input identifying a choice of an item stored in a source material library to be played back to the subscriber at a location remote from the source material library, the item containing information to be sent from a transmitter to the receiving system, and wherein the receiving system comprises transceiver means for automatically

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receiving the requested information from the transmitter as compressed formatted data blocks; receiver format conversion means, coupled to the transceiver means, for converting the compressed formatted data blocks into a format suitable for storage and processing resulting in playback in real time; storage means, coupled to the receiver format conversion means, for holding the compressed formatted data; decompressing means, coupled to the receiver format conversion means, for decompressing the compressed formatted information; and output data conversion means, coupled to the decompressing means, for playing back the decompressed information in real time at a time specified by the user.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate the presently preferred apparatus and method of the invention and, together with the general description given above and the detailed description of the preferred embodiment given below serve to explain the principles of the invention. In the drawings:

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention;

FIGS. 2a and 2b are detailed block diagrams of preferred implementations of the transmission system of the present invention;

FIG. 3 is a flowchart of a preferred method of ordering a selection from a library in accordance with the present invention;

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention;

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention;

FIG. 6 is a block diagram of a preferred implementation of the receiving system of the present invention;

FIG. 7 is a flowchart of a preferred method of distribution of the present invention; and

FIGS. 8a-8e are block diagrams of preferred implementation of data structures and data blocking for items in the audio and video distribution system of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1a-1g are high level block diagrams showing different configurations of the transmission and receiving system of the present invention. FIGS. 1a, 1b, 1d, 1e, 1f, and 1g each show transmission system 100, described in more detail below with respect to FIGS. 2a and 2b. A user of the transmission and receiving system of the present invention preferably accesses transmission system 100 by calling a phone number or by typing commands into a computer. The user then chooses audio and/or video material from a list of available items which he or she wants to listen to and/or watch.

As shown in FIG. 1a, the transmission and receiving system may preferably comprise a peer to peer configuration where one transmission system 100 communicates with one reception system 200. As shown in FIG. 1b, the transmission and receiving system of the present invention may alternatively comprise a plurality of reception systems 200, 200', 200'', and 200''', which are each associated with a single transmission system 100.

FIG. 1c shows a high level block diagram of the transmission and receiving system of the present invention

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including remote order processing and item database 300, described in more detail with respect to FIG. 3. Remote order processing and item database 300 preferably enables users to access desired items by remote communication. The remote order processing and item database 300 may communicate with a plurality of transmission systems 100, 100', 100'', and 100''', each of which communicates with a respective set of reception systems 200, 200', 200'', and 200'''. Each of the reception systems in sets 200, 200', 200'', and 200''' may preferably communicate with a plurality of users.

FIG. 1d shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of users via a reception system 200 configured as a cable television system.

FIG. 1e shows a high level block diagram of the transmission and receiving system of the present invention including a transmission system 100 distributing to a plurality of reception systems 200 and 200'. In the configuration shown in FIG. 1e, reception system 200 is a direct connection system wherein a user is directly connected to transmission system 100. Reception system 200' preferably includes a first cable television system 200a and a second cable television system 200b. Users of cable television systems 200a and 200b are indirectly connected to transmission system 100.

FIG. 1f shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing via several channels to reception systems 200 and 200'. Reception system 200 is preferably non-buffering. In such a system, users are directly connected to transmission system 100, as in reception system 200 in FIG. 1e.

Reception system 200' shown in FIG. 1f is a cable television system, as shown in reception system 200' of FIG. 1e. In FIG. 1f, the reception system 200' is preferably buffering, which means that users may receive requested material at a delayed time. The material is buffered in intermediate storage device 200c in reception system 200'.

In the configuration of FIG. 1f, decompression of the requested material may preferably occur at the head end of a cable television reception system 200'. Thus, distribution may be provided to users via standard television encoding methods downstream of the head end of the cable distribution system. This method is preferred for users who only have cable television decoders and standard television receivers.

FIG. 1g shows a high level block diagram of the transmission and receiving system of the present invention including transmission system 100 distributing to a reception system 200, which then preferably transmits requested material over airwave communication channels 200d, to a plurality of users. The transmission and receiving system shown in FIG. 1g may preferably transmit either compressed or uncompressed data, depending on the requirements and existing equipment of the user. The airwave transmission and receiving system shown in FIG. 1g may preferably employ either VHF, UHF or satellite broadcasting systems.

With respect to the transmission and receiving systems set forth in FIGS. 1a-1g, the requested material may be fully compressed and encoded, partly decompressed at some stage in transmission system 100, or fully decompressed prior to transmission. The reception systems 200 may either buffer the requested material for later viewing, or decompress in real time the requested material as it is distributed by transmission system 100. Alternatively, the reception

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systems 200 of the present invention may perform a combination of buffering and non-buffering by buffering some of the requested material and decompressing the remainder of the requested material for immediate viewing as it is distributed by transmission system 100.

In direct connection configurations, such as reception systems 200 shown in FIGS. 1e and 1f, the user preferably selects the reception system 200 to which the requested material is sent, and optionally selects the time playback of the requested material as desired. Accordingly, the user may remotely access the transmission system 100 from a location different than the location of reception system 200 where the material will be sent and/or played back. Thus, for example, a user may preferably call transmission system 100 from work and have a movie sent to their house to be played back after dinner or at any later time of their choosing.

In non-direct connection reception systems such as shown in reception system 200' of FIG. 1g, intermediate storage device 200c may preferably include, for example, sixteen hours of random access internal audio and video storage. A reception system with such storage is capable of storing several requested items for future playback. The user could then view and/or record a copy of the decompressed requested material in real time, or compressed in non-real time, at a time of their choosing. Accordingly, the user would not have to make a trip to the store to purchase or rent the requested material.

In any of the transmission and receiving systems illustrate in FIGS. 1a-1g, the requested material may be copy protected. To achieve copy protection, the requested material, as an item, is encoded as copy protected during storage encoding in transmission system 100. The user may then play back the item only one time. The user may also optionally review select portions of the item prior to its automatic erasure from the memory of the reception system 200. In this way, requested material may be distributed to "view only" users and also to "view and copy" users who wish to retain copies of the distributed items.

Copy protected programs, when decompressed and played back would have a copy protection technique applied to the analog and digital output signals. The analog video output is protected from copying through the use of irregular sync signals, which makes the signal viewable on a standard television but not recordable on a audio/video recorder. The receiving system recognizes copy protected programs and disables the audio-video recorder. Digital output protection is effected through copy protect bit settings in the digital output signal, thus preventing a compatible digital recorder from recording the digital audio and/or video signal stream. A protected item will not be passed to the compressed data port of the digital recorder for off line storage.

FIGS. 2a and 2b illustrate detailed block diagrams of preferred implementations of the transmission system 100 of the present invention. Transmission system 100 may either be located in one facility or may be spread over a plurality of facilities. A preferred embodiment of transmission system 100 may preferably include only some of the elements shown in FIGS. 2a and 2b.

Transmission system 100 of a preferred embodiment of the present invention preferably includes source material library means for temporary storage of items prior to conversion and storage in a compressed data library means. The items of information may include analog and digital audio and video information as well as physical objects such as books and records which require conversion to a compatible media type before converting, compressing and storing their audio and video data in the compressed data library means.

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As shown in FIG. 2a, the source material library means included in transmission system 100 preferably includes a source material library 111. The source material library 111 may include different types of materials including television programs, movies, audio recordings, still pictures, files, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects. These materials are converted to or recorded on a media format compatible to the digital and analog inputs of the system prior to being compressed and stored in a compressed data library 118. The different media formats preferably include digital or analog audio and video tapes, laser disks, film images, optical disks, magnetic disks, computer tapes, disks and, cartridges.

The source material library 111, according to a preferred embodiment of the present invention, may preferably include a single source material library or a plurality of source material libraries. If there are a plurality of source material libraries, they may be geographically located close together or may be located far apart. The plurality of source material libraries may communicate using methods and channels similar to the methods and channel types which libraries may employ for communication with the receiving system 200 of the user, or the source material libraries may communicate via any available method.

Prior to being made accessible to a user of the transmission and receiving system of the present invention, the item must be stored in at least one compressed data library 118, and given a unique identification code by identification encoder 112. Storage encoding, performed by identification encoder 112, aside from giving the item a unique identification code, optionally involves logging details about the item, called program notes, and assigning the item a popularity code. Storage encoding may be performed just prior to conversion of the item for transmission to reception system 200, at any time after starting the conversion process, or after storing the item in the compressed data library 118.

In a preferred embodiment of the present invention, the method of encoding the information involves assigning a unique identification code and a file address to the item, assigning a popularity code, and inputting the program notes. This process is identical for any of the different media types stored in the source material library 111.

The transmission system 100 of the present invention also preferably includes conversion means 113 for placing the items from source material library 111 into a predetermined format as formatted data. In the preferred embodiment, after identification encoding is performed by identification encoder 112, the retrieved information is placed into a predetermined format as formatted data by the converter 113. The items stored in source material library 111 and encoded by identification encoder 112 may be in either analog or digital form. Converter 113 therefore includes analog input receiver 127 and digital input receiver 124. If items have only one format, only one type of input receiver 124 or 127 is necessary.

When the information from identification encoder 112 is digital, the digital signal is input to the digital input receiver 124 where it is converted to a proper voltage. A formatter 125 sets the correct bit rates and encodes into least significant bit (1sb) first pulse code modulated (pcm) data. Formatter 125 includes digital audio formatter 125a and digital video formatter 125b. The digital audio information is input into a digital audio formatter 125a and the digital video information, if any, is input into digital video formatter 125b. Formatter 125 outputs the data in a predetermined format.

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When the retrieved information from identification encoder 112 is analog, the information is input to an analog-to-digital converter 123 to convert the analog data of the retrieved information into a series of digital data bytes. Converter 123 preferably forms the digital data bytes into the same format as the output of formatter 125.

Converter 123 preferably includes an analog audio converter 123a and an analog video converter 123b. The analog audio converter 123a preferably converts the retrieved audio signal into pcm data samples at a fixed sampling rate. The analog video converter 123b preferably converts the analog video information, retrieved from identification encoder 123, into pcm data also at fixed sampling rates.

If the retrieved information being converted contains only audio information, then the audio signal is fed to the appropriate digital audio input or analog audio input. When the retrieved information contains both audio and video information, the audio and video signals are passed simultaneously to the audio and video converter inputs. Synchronization between the audio and video data can be maintained in this way.

If, for example, the retrieved information to be converted from the source material library 111 is a motion picture film, the picture frames in the film are passed through a digital telecine device to the digital input receiver 124. Format conversion is then preferably performed by digital video formatter 125b. Accompanying audio information is passed through an optical or magnetic digital playback device. This device is connected to digital audio formatter 125a.

In some cases, such as inter-library transfers, incoming materials may be in a previously compressed form so that there is no need to perform compression by precompression processor 115 and compressors 128 and 129. In such a case, retrieved items are passed directly from identification encoder 112 to the compressed data formatter 117. The item database records, such as the program notes which may also be input from another system, to the compressed data formatting section 117, where this data, if necessary, is reformatted to make it compatible with the material stored in compressed data library 118. Such material may be received in the form of digital tapes or via existing communication channels and may preferably input directly to a short term storage 117' in the compressed data formatting section 117.

The transmission system 100 of the present invention also preferably includes ordering means for placing the formatted information into a sequence of addressable data blocks. As shown in FIG. 2a, the ordering means in the preferred embodiment includes time encoder 114. After the retrieved information is converted and formatted by the converter 113, the information may be time encoded by the time encoder 114. Time encoder 114 places the blocks of converted formatted information from converter 113 into a group of addressable blocks. The preferred addressing scheme employs time encoding. Time encoding allows realignment of the audio and video information in the compressed data formatting section 117 after separate audio and video compression processing by precompression processor 115 and compressor 116.

The converted formatted information of the requested material is then preferably in the form of a series of digital data bytes which represent frames of video data and samples of the audio data. A preferred relationship of the audio and video bytes to each other is shown in FIG. 8. Incoming signals are input and converted in sequence, starting with the first and ending with the last frame of the video data, and starting with the first and ending with the last sample of the

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audio data. Time encoding by time encoder 114 is achieved by assigning relative time markers to the audio and video data as it passes from the converter 113 through the time encoder 114 to the precompression processor 115. Realignment of audio and video data, system addressing of particular data bytes, and user addressing of particular portions of items are all made possible through time encoding.

Through the use of the address of an item and its frame number it is possible to address any particular block of audio or video data desired. From here, further addressing down to the individual byte is possible. Frames and groups of frames may preferably be further broken down, as necessary to the individual bytes and bits, as required for certain processing within the system.

User and system addressing requirements dictate the level of granularity available to any particular section of the system. Users are able to move through data in various modes, thus moving through frame addresses at various rates. For example, a user may desire to listen to a particular song. They may preferably enter the song number either when requesting the item from the compressed data library 118 and only have that song sent to their receiving system 200 or they may preferably select that particular song from the items buffered in their receiving system 200. Internal to the system, the song is associated with a starting frame number, which was indexed by the system operator via the storage encoding process. The system item database may contain information records for individual frames or groups of frames. These can represent still frames, chapters, songs, book pages, etc. The frames are a subset of, and are contained within, the items stored in the compressed data library 118. Time encoding by time encoder 114 makes items and subsets of items retrievable and addressable throughout the transmission system 100. Time encoding enables subsequent compression of the information to be improved because data reduction processes may be performed in the time dimension. This is described in greater detail below.

The transmission system 100 of the present invention also preferably includes data compression means for compressing the formatted and sequenced data. The sequence of addressable data blocks which was time encoded and output by time encoder 114 is preferably sent to precompression processor 115. The data arriving from time encoder 114 may be at various frame rates and of various formats. Precompression processor 115 preferably includes audio precompressor 115a and video precompressor 115b.

Video precompression processor 115b buffers incoming video data and converts the aspect ratio and frame rate of the data, as required by compression processor 116. The frame buffer 131 of video precompression processor 115b holds all incoming data until the data is compressed by the data compressor 116. The incoming video data is processed for sample rate optimization, aspect ratio fitting and buffered in buffer 130 for compression processing by the video precompression processor 115b.

Video precompression processor 115b processes the incoming video data so that it fits into the aspect ratio of the transmission and receiving system of the present invention. When incoming material with a different aspect ratio than the aspect ratio of the system is selected, a chosen background is preferably placed around the inactive region of the video information. In this way, no data is lost to differences in the aspect ratio between incoming material, and the converted and compressed data stored in the transmission system 100. Images resulting from a different aspect ratio may have an inactive region where background information

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is contained, or may be converted into a best fit arrangement. Output from the video precompression processor 115b is stored in the frame buffer 131, which is dual ported and is directly addressable by video compressor 129.

The incoming audio data is processed for sample rate and word length optimization and is then buffered in buffer 130 for compression processing by the audio precompression processor 115a. Audio precompression processor 115a may preferably transcode incoming audio information, as required, to create the optimum sample rate and word lengths for compression processing. The output of the audio precompression processor 115a is a constant sample rate signal of a fixed word length which is buffered in frame buffer 130. The frame buffer 130 is dual ported and is directly addressable by audio compressor 128. Blocking the audio data into frames at audio precompression processor 115a makes it possible to work with the audio data as addressable packets of information.

Once precompression processing is finished, the frames are compressed by the data compressor 116. Compressor 116 preferably comprises an audio data compressor 128 and a video data compressor 129. The benefits of data compression performed by data compressor 116 are shortened transmission time, faster access time, greater storage capacity, and smaller storage space requirements. Compression processing performed by compressors 128 and 129 requires multiple samples of data to perform optimum compression. Audio and video information is preferably converted into blocks of data organized in groups for compression processing by audio compressor 128 and video compressor 129, respectively. These blocks are organized as frames, and a number of frames are contained respectively in the buffers 130 and 131. By analyzing a series of frames it is possible to optimize the compression process.

Audio data is preferably compressed by audio compressor 128 by application of an adaptive differential pulse code modulation (ADPCM) process to the audio data. This compression process, which may be implemented by the apt-x 100 digital audio compression system, is manufactured by Audio Processing Technology (APT). Audio compression ratios of 8x or greater are achieved with the APT system.

Compression by compressor 116 may be performed on a group of 24 video frames may preferably be passed in sequence to the frame buffer 130 of the video precompression processor 115b where they are analyzed by video compressor 129 which performs data reduction processing on the video data. Video compression is preferably performed by video compressor 129. Video compression is achieved by the use of processors running algorithms designed to provide the greatest amount of data compression possible. Video data compression preferably involves applying two processes: a discrete cosine transform, and motion compensation. This process is described in "A Chip Set Core of Image Compression", by Artieri and Colavin. Multiple frames of video data may preferably be analyzed for patterns in the horizontal (H), vertical (V), diagonal (zigzag) and time (Z) axis. By finding repetition in the video data, redundancy may be removed and the video data may be compressed with a minimal loss of information.

In accordance with a preferred embodiment of the present invention, the transmission system 100 may further comprise compressed data storing means, coupled to the compression means, for storing as a file the compressed sequenced data with the unique identification code received from the data compression means. After compression processing by compressor 116, the compressed audio and video

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data is preferably formatted and placed into a single file by the compressed data storage means 117. The file may contain the compressed audio and/or video data, time markers, and the program notes. The file is addressable through the unique identification code assigned to the data by the identification encoder 112.

Further, according to the present invention, the transmission system preferably includes compressed data library means for separately storing composite formatted data blocks for each of the files. The compressed data storage means preferably includes compressed data library 118, as shown in FIG. 2b. After the data is processed into a file by the compressed data storage means 117, it is preferably stored in a compressed data library 118. In a preferred embodiment, compressed data library 118 is a network of mass storage devices connected together via a high speed network. Access to any of the files stored in compressed data library 118 is available from multiple reception systems 200 connected to the transmission and receiving system.

Stored items are preferably accessed in compressed data library 118 through a unique address code. The unique address code is a file address for uniquely identifying the compressed data items stored in the compressed data library section of a library system. This file address, combined with the frame number, and the library system address allow for complete addressability of all items stored in one or more compressed data libraries 118. Compressed data library addresses along with receiving system addresses are used to form a completely unique address for distribution system control.

The unique address code is an address assigned to the item by the system operator during storage encoding, which is preferably done prior to long term storage in the compressed data library 118. In a preferred embodiment, the unique address code is used for requesting and accessing information and items throughout the transmission and receiving system. The unique address code makes access to the requested data possible.

The storage encoding process performed by encoder 112 also allows entry of item notes and production credits. Production credits may include the title, names of the creators of the item such as the producer, director, actors, etc. Other details regarding the item which may be of interest and which may make the items more accessible are kept in an item database.

Item addresses are mapped to item names by identification encoder 112 and may preferably be used as an alternative method of accessing items. The item names are easier to remember, thus making user access more intuitive by using item names. The storage encoding entry process performed in identification encoder 112 operates a program which updates a master item database containing facts regarding items in the compressed data library system. The storage encoding process may be run by the system operator whereby the system operator accesses the master item database to track and describe items stored in one or more compressed data libraries. The names and other facts in the item database may preferably be updated at any time via the storage encoding process. Changes made to the master item database may be periodically sent to the remote order processing and item database 300.

As described in more detail later, a user may preferably access an item via its unique identification code, via its title or the user may use other known facts for accessing an item. The user may access items in the compressed data library 118 direct using the unique address code or the user may

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obtain access via the remote order processing and item database 300. Indirect access via the remote order processing and item database 300 is possible using, for example, a synthesized voice system, a query type of computer program interface, or customer assistance operators. In addition to providing interactive access to the remote order processing and item database 300, a catalog listing some or all available titles may also preferably be published. With a published catalog, users may obtain the unique address code for an item very easily thereby allowing for retrieval from the compressed data library 118 without any help from an interactive system.

To achieve user access via an interactive system, facts about the items may be kept in files as a part of the items or the facts may be kept separately, for example, by systems which only to inform users of the available items and take orders. For example, in systems which have portions split in separate locations, the facts about the items may be separated from the items themselves and stored in separate files. A system of this type can distribute user orders to other portions of the transmission and receiving system for ultimate distribution to the requesting user. Further, to support a plurality of users, multiple versions of the item database may preferably reside either on multiple database servers, in catalogs, or on other computer systems.

The item database master may reside in the system control computer 1123 where may be updated and kept current to the contents of the compressed data library 118. The data stored in the item database master may be accessed by users via application programs, running on the system control computer 1123, and on the reception system 200 of the user. Users may connect to the item database via any available telecommunication channels. Copies of the item database master may be updated and informed of new entries into compressed data library 118 at periodic intervals determined by the system manager.

Other copies of the item database master may also be made available to users from the remote order processing and item database 300 which batch processes and downloads user requests to the control computer 1123 of the compressed data library 118 via standard telecommunications or high speed communication channel. Moreover, multiple remote order processing and item database 300 sites make it possible for more locations to process orders than there are library facilities, and thus make order processing more efficient.

Preferably, access of a requested item via the remote order processing and item database 300 operates as follows. If the user does not know the title of the desired item, he or she may request the item by naming other unique facts related to the item. For example, a user would be able to access an item about Tibetan Medicine by asking for all items which include information about "Tibet" and include information about "Medicine." The remote order processing and item database 300 would then be searched for all records matching this request. If there is more than one item with a match, each of the names of the matching items are preferably indicated to the user. The user then selects the item or items that he or she desires. Upon selection and confirmation, by the user, a request for transmission of a particular item or items is sent to the distribution manager program of the system control computer 1123. The request contains the address of the user, the address of the item, and optionally includes specific frame numbers, and a desired viewing time of the item.

The storage encoding process performed by identification encoder 112 also allows entry of a popularity code. The

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popularity code is preferably assigned on the basis of how often the corresponding item is expected to be requested from the compressed data library 118. This popularity code can be used to determine the most appropriate form of media for storage of the compressed data in a mixed media system. Mixed media systems are preferably employed as more cost effective storage in very large compressed data libraries 118. Once assigned, the popularity code may be dynamically updated, by factoring item usage against system usage. Thus, stored items are dynamically moved to the most appropriate media over their life in the compressed data library 118. If a particular item stored in compressed data library 118 is retrieved frequently by users, storage in compressed data library 118 is preferably on higher speed, more reliable, and probably more expensive media. Such media includes Winchester and magneto-optical disks.

If an item stored in compressed data library 118 is retrieved less frequently, it may be stored in the compressed data library 118 on a digital cassette tape. Examples of such cassette tapes are a Honeywell RSS-600 (Honeywell Inc. Minneapolis Minn.), Summus JukeBoxFilm and tape library (Summus Computer Systems, Houston, Tex. 800-255-9638), or equivalent cassette tapes. All items stored in the compressed data library 118 are on line and are connected to the high speed network. Thus, they may be readily accessed.

Instead of using a remote order processing and item database 300, the compressed data library 118 may include the program notes which were input by the system operator. The program notes may preferably include the title of the item stored in the compressed data library 118, chapter or song titles, running times, credits, the producer of the item, acting and production credits, etc. The program notes of an item stored in the compressed data library 118 may be thus contained within the compressed data file formed in the compressed data formatter 117.

In some cases, where multiple compressed data libraries 118 are organized, the popularity code may dictate distribution of a particular item to multiple distribution systems. In such cases, a copy of the compressed data is sent to another library and the other library can then distribute the compressed data to users concurrently with the original compressed data library 118.

The compressed data library 118 is composed of a network of storage devices connected through a High Performance Parallel Interface (HPPI) Super Controller (available from Maximum Strategy Inc., San Jose, Calif.). Therefore, multiple communication controllers may preferably access the large quantity of data stored in compressed data library 118 at very high speeds for transfer to a reception system 200 of a user upon request. For more details on this configuration see Ohrenstein, "Supercomputers Seek High Throughput and Expandable Storage", Computer Technology Review, pp. 33-39 April 1990.

The use of an HPPI controller allows file placement onto multiple mass storage devices of the compressed data library 118 with a minimum of overhead. Database management software controls the location and tracking of the compressed data library 118 which can be located across multiple clusters of file servers connected together by one or more high speed networks over multiple systems.

The transmission system 100 of the present invention may also preferably include library access/interface means for receiving transmission requests to transmit items and for retrieving formatted data blocks stored in the compressed data library 118 corresponding to the requests from users. The compressed audio and/or video data blocks, along with

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any of the information about the item stored in the compressed data library 118 may be accessed via library access interface 121. The library access interface 121 receives transmission requests either directly from the users or indirectly by remote order processing and item database 300.

The transmission format means 119 receives the request and retrieves the composite formatted data block of the requested item stored in compressed data library 118 and converts the compressed formatted data block into a format suitable for transmission. The requested item is then sent to the user via the transmitter 122 or directly via interface 121.

In a preferred embodiment of the present invention, customer access of an item stored in compressed data library 118 via the library access interface 121 may be performed in various ways. The methods of requesting a stored item are analogous to making an airline reservation or transferring funds between bank accounts. Just as there are different methods available for these processes it is desirable to have several ordering methods available to the users of the system of the present invention. For example, telephone tone decoders and voice response hardware may be employed. Additionally, operator assisted service or user terminal interfaces may be used.

Customer access via telephone tone decoders and voice response hardware is completely electronic and may preferably be performed between a system user and a computer order entry system. The user may obtain help in ordering an item from a computer synthesized voice. With such an access method, the user will normally be accessing a dynamic catalog to assist them. Confirmation of selections and pricing information may preferably be given to the user prior to completion of the transaction.

This process of access, performed by remote order processing and item database configuration 300, shown in FIG. 1c, preferably includes the following steps, shown in flowchart 3000 of FIG. 3. First, the user calls the system access number (step 3010). Upon successfully dialing the system access number, the user receives instructions from the system (step 3020). The instructions may preferably include steps the user must take in order to place an order. Preferably, the instructions may be bypassed by the experienced user who knows how to place an order.

The user then enters a customer ID code by which the system accesses the user's account, and indicates to the system that the user is a subscriber of the system (step 3030). In response to the user entering his ID code in step 3030 the system confirms whether the user is in good standing (step 3040). If the user is in good standing, the system queues the user to input his request (step 3050).

The user request may preferably be made from a catalog sent to each of the subscribers of the system. The user will preferably identify his choice and enter the corresponding identification code of the item (step 3060). The system then preferably confirms the selection that the user has made and informs the user of the price of the selection (step 3070).

The user then indicates whether the confirmation performed in step 3070 is correct (step 3080). If the confirmation performed in step 3070 is correct, the user so indicates and then inputs a desired delivery time and delivery location (step 3090).

If the confirmation performed in step 3070 does not result in the selection desired by the user, the user re-inputs the item identification code in step 3060 and the confirmation steps 3070 and 3080 are repeated. Therefore, proper selection of the selected item is insured. Once there is confirmation, the user enters the playback time and destination in step 3090.

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The user then preferably confirms that the order is correct (step 3100). The confirmation performed in step 3100 includes confirmation of the entire transaction including the selected item, the selected time of playback, and the location of playback. The transaction is then completed and the request is placed on a transmission queue at the appropriate compressed data library 118 (step 3110).

Access by the users via operator assisted service includes telephone operators who answer calls from the users. The operators can sign up new customers, take orders, and help with any billing problems. The operators will preferably have computer terminals which give them access to account information and available program information. Operators can also assist a user who does not know a title by looking up information stored in files which may contain the program notes, as described above. Once the chosen program is identified, the operator informs the user of the price. After the user confirms the order, the user indicates the desired delivery time and destination. The operator then enters the user request into the system. The request is placed in the transmission queue.

Access by a user terminal interface method provides the user with access from various terminals including personal computers, and specialized interfaces built into the reception system 200 for the user. Such access allows a user to do a search of available programs from a computer screen. This process involves the steps 4000 shown in FIG. 4.

FIG. 4 is a flowchart of a preferred method of user request via a user interface of the present invention. In the preferred method of FIG. 4, the user first logs onto the user terminal interface (step 4010). After the user logs on, the user may preferably select a desired item by searching the database of available titles in the library system control computer 1123 or any remote order processing and item database 300 (step 4020). The search may preferably be performed using the database containing the program notes, described above with respect to FIGS. 2a and 2b. It is possible to process orders and operate a database of available titles at multiple locations remote of the source material library 111. Users and order processing operators may preferably access such remote systems and may place transmission requests from these systems. Orders placed on these systems will be processed and distributed to the appropriate libraries. After the desired item is found, the user selects the item for transmission at a specific time and location (step 4030).

To complete an order, the remote order processing and item database 300 preferably connects to the compressed data library 118 of choice via the library access interface 121 and communicates with the library system control computer 1123. Preferably the user's account ID, identification of the item for transmission and the chosen destination for the item are communicated. Through employment of distributed order processing systems of this type many orders may be processed with minimal library overhead.

All transmission requests from the access methods are placed into a transmission queue managed by the library system control computer 1123. This queue is managed by a program that controls the distribution of the requested items to the reception system 200 of the user. The queue manager program also operates in the system control computer and keeps track of the user ID, the chosen program and price, the user channel type, the number of requests for a given program, the latest delivery time, and the compressed data library media type (for example, high speed or low speed). From this information, the queue manager program makes best use of the available distribution channels and media for efficient transmission and storage of the requested items.

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The queue manager program also manages the file transmission process for multiple requests for a single file, stored in the compressed data library 118. During a given time period, the queue manager program will optimize access to the compressed data library 118, wherever possible it will place the data on multiple outputs for simultaneous transmission to more than one requesting user.

The conversion performed by transmission data converter 119 encodes the data for the transmission channel. The transmission data converter transfers the desired segments of data from the compressed data library 118 onto the communication channel which is used to deliver the data to the reception system 200.

The transmission system 100 of the present invention preferably further includes transmitter means 122, coupled to the compressed data library 118, for sending at least a portion of a specific file to at least one remote location. The transmission and receiving system of the present invention preferably operates with any available communication channels. Each channel type is accessed through the use of a communications adaptor board or processor connecting the data processed in the transmission format converter 119 to the transmission channel.

A preferred embodiment of the present invention also includes means by which to access users via common access lines. These may include standard telephone, ISDN or B-ISDN, microwave, DBS, cable television systems, MAN, high speed modems, or communication couplers. Metropolitan Area Networks (MANS) which are common carrier or private communication channels are designed to link sites in a region. MANS are described by Morreale and Campbell in "Metropolitan-area networks" (IEEE Spectrum, May 1990 pp. 40-42). The communication lines are used to transmit the compressed data at rates up to, typically, 10 Mb/sec.

In order to serve a multitude of channel types, a preferred embodiment of the present invention includes a multitude of output ports of each type connected to one or more computers on the transmission and receiving system. The management of transmission is then distributed. That is, the computer controlling the transmission queue tells the transmission encoding computer its task and then the task is executed by the transmission encoding computer, independent of the transmission queue computer. The transmission queue computer provides the data for transmission by file server which also distributes to other transmitters located in the same or other transmission encoding computers.

FIG. 5 is a flowchart of a preferred method of implementing a queue manager program of the present invention. The queue manager program, in the distribution process, preferably confirms availability of an item from the compressed data library 118 and logically connects the item stored in compressed data library 118 to the communications controller, illustrated in FIG. 2a (step 5010). After availability is confirmed in step 5010, the data awaits transmission by the transmitter 122.

After availability is confirmed in step 5010, the communications controller preferably makes the physical connection to the reception system 200 of the user (step 5020). This is normally done by dialing the receiving device of the user. The reception system 200 preferably answers the incoming call and confirms the connection (step 5030).

Once connected to the reception system 200, in steps 5020 5030, the data stored in compressed data library 118 is preferably transferred in data blocks from the compressed data library 118 to the communications controller (step 5040). The data blocks are buffered by the communications

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controller. The buffered data is sent down the communications channel to the reception system 200 by transmitter 122 (step 5050).

The transmitter 122 places the formatted data onto the communications channel. This is an electrical conversion section and the output depends upon the chosen communication path. The signal is sent to the reception system 200 in either a two way or a one way communication process. In a standard telephone connection, the transmitter 122 is preferably a modem. When using an ISDN channel, the transmitter 122 is preferably a data coupler.

In a preferred embodiment of the present invention, many forms of communication channels may be employed. Distribution of information is by common carrier communication channels whenever possible. These channels include common telephone service, ISDN and Broadband ISDN, DBS, cable television systems, microwave, and MAN.

In order that reception is performed efficiently, the reception system 200 confirms reception of the initial data block before receiving the remaining data blocks whenever possible (step 5060). After all data blocks have been received and reception is confirmed, the communications controller breaks the physical connection to the reception system 200 (step 5070). Then, confirmation of the transmission is sent to the queue manager (step 5080). Finally, the queue manager updates the list and sends the information to the billing program, which updates the account of the user (step 5090).

When item distribution occurs through a broadcasting method such as a communications satellite, the process is one way, with ongoing reception not being confirmed by the reception system 200. In these situations, some further redundancy is included by transmission formatter 122 with the data blocks for error correction processing to be performed in the reception system 200. In such one way communication situations, the queue manager program running in library system control computer 1123 confirm reception, via telephone line connection for example, to the reception system 200 after distribution. This should occur prior to updating the user's account and the dispatch lists.

The real time output signals are output to a playback system such as an audio amplifier and/or television. This output may also be sent to an audio/video recorder for more permanent storage. Moreover, in the preferred embodiment only non-copy protected data can be recorded on an audio/video recorder. Any material which is copy protected will be scrambled at the video output in a way which makes it viewable on a standard audio/video receiver but does not allow for recording of the material.

The reception system 200 has playback controls similar to the controls available on a standard audio/video recorder. These include: play, fast forward, rewind, stop, pause, and play slow. Since items are preferably stored on random access media, the fast forward and rewinding functions are simulations of the actual events which occur on a standard audio/video recorder. Frames do not tear as on an audio/video recorder, but in fast play modes they go by very quickly.

The library access interface 121 in the reception system 200 preferably includes a title window where a list of available titles are alphabetically listed. This window has two modes: local listing of material contained within the library system control computer 1123, and library listing for all available titles which may be received from the available, remotely accessible libraries. The titles listed in this window are sent from the database on the library system control computer 1123 or the remote order processing and item database 300.

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The system may also preferably include dispatching control software which receives input from the remote order processing and item database 300 and sends distribution requests to the distribution systems. In instances where not all items are contained in each of the compressed data libraries 118, the dispatching software will keep a list of the available titles in a particular compressed data library 118. The dispatch software may also preferably coordinate network traffic, source material library 111 utilization, source material library 111 contents, and connection costs. By proper factoring of these variables, efficient use of the available distribution channels may be achieved.

FIG. 6 illustrates a block diagram of a preferred implementation of the reception system 200 according to the present invention. The reception system 200 is responsive to user requests for information stored in source material library 111. The reception system 200 includes transceiver 201 which receives the audio and/or video information transmitted by transmitter 122 of the transmission system 100. The transceiver 201 automatically receives the information from the transmitter 122 as compressed formatted data blocks.

The transceiver 201 is preferably connected to receiver format converter 202. The receiver format converter 202 converts the compressed formatted data blocks into a format suitable for playback by the user in real time.

In the reception system 200 of the present invention, the user may want to play back the requested item from the source material library 111 at a time later than when initially requested. If that is the case, the compressed formatted data blocks from receiver format converter 202 are stored in storage 203. Storage 203 allows for temporary storage of the requested item until playback is requested.

When playback is requested, the compressed formatted data blocks are sent to data formatter 204. Data formatter 204 processes the compressed formatted data blocks and distinguishes audio information from video information.

The separated audio and video information are respectively decompressed by audio decompressor 209 and video decompressor 208. The decompressed video data is then sent simultaneously to converter 206 including digital video output converter 211 and analog video output converter 213. The decompressed audio data is sent simultaneously to digital audio output converter 212 and analog audio output converter 214. The outputs from converters 211–214 are produced in real time.

The real time output signals are output to a playback system such as a TV or audio amplifier. They may also be sent to an audio/video recorder of the user. By using the reception system 200 of the present invention, the user may utilize the stop, pause, and multiple viewing functions of the receiving device. Moreover, in a preferred embodiment of the present invention, the output format converters may be connected to a recorder which enables the user to record the requested item for future multiple playbacks.

FIG. 7 is a flow chart 400 of a preferred method of distribution of the present invention. The distribution method is preferably responsive to requests identifying information to be sent from the transmission system 100 to remote locations. Method 400 assumes that the items have already been stored in compressed data library 118.

As illustrated in FIG. 7, the first step of the distribution method 400 involves retrieving the information for selected items in the source material library 111, upon a request by a user of the distribution system (step 412). This is analogous to taking books off of a shelf at the local public library after the person has decided that he or she would like to read them.

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After the information for the selected items is retrieved in step 412, the distribution method 400 of the present invention further comprises the step of processing the information for efficient transfer (step 413). The processing performed in step 413 preferably includes assigning a unique identification code to the retrieved information performed by identification encoder 112, shown and described with respect to FIG. 2a (step 413a). The processing also preferably includes placing the retrieved information into a predetermined format as formatted data by converter 113 (step 413b), and placing the formatted data into a sequence of addressable data blocks by ordering means 114 (step 413c).

Processing step 413 also includes compressing the formatted and sequenced data performed by data compressor 116 (step 413d), and storing as a file the compressed sequenced data received from the data compression means with the unique identification assigned by the identification encoding means (step 413e).

After the information is processed for efficient transfer, in substeps 413a–e of step 413, the distribution method 400 of the present invention preferably includes the step of storing the processed information is stored in a compressed data library (step 414). Preferably, the compressed data library is analogous to compressed data library 118, described with respect to FIG. 2a.

After the information is stored in a compressed data library 118, the transmission and receiving system preferably waits to receive a transmission request (step 415). Upon receiving a transmission request, from transmission system 100, the compressed formatted data is preferably converted for output to a reception system 200, selected by the user. The information is preferably transmitted over an existing communication channel to a reception system 200, and is received by that system (step 417). When the information is received in step 417, it is preferably formatted the particular type of reception system 200 to which the information is sent.

The received information is preferably buffered (step 418) by a storage means analogous to element 203 shown in FIG. 3. The information is preferably buffered so that it may be stored by the user for possible future viewings. The requested information is then played back to the reception system 200 of the user at the time requested by the user (step 419).

FIGS. 8a–8e are block diagrams of preferred implementations of data structures and data blocking for items in the audio and video distribution system. FIG. 8a shows the block structure of video data where a video frame 812 is composed of a plurality of video samples 811, and a second of video 813 is composed of a plurality of video frames 812.

FIG. 8b shows the block structure of audio data where an audio data frame 822 is composed of a plurality of audio samples 821, and a second of audio 823 is composed of a plurality of audio data frames 822. FIG. 8c shows the block structure of a data frame 832 composed of a plurality of data bytes 831. The combination of the audio frames 812, video frames 822, and data frames 832 comprise the elements of a single item. FIG. 8d shows a block representation of for three illustrative items which may be stored in the source material library 111. Each of items 1–3 contains its own arrangement of video frames 812, audio frames 822, and data frames 832.

FIG. 8e shows methods of distribution to reception systems 200 with both multiplexed and non-multiplexed signal paths, both addressed and non-addressed blocks of items. A block of an item may be an entire item or, alternatively, may

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be only a portion of an item, as selected by a user. Further, the blocks may be composed of either compressed, partially compressed, or fully decompressed data, as required by the configuration of the reception system 200.

As shown in FIG. 8e, the same block, for example, block 1, may be simultaneously transmitted over different distribution channels. The blocks when transmitted over one of the distribution channels may have receiver addresses appended to the blocks or the reception system 200 may have been preconfigured to receive the blocks comprising data frames for particular items from the active distribution channel.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with the true scope and spirit of the invention being indicated by the following claims.

What is claimed is:

1. A transmission system responsive to input from a user positioned at an accessing location for transmitting information to a premises selected by the user, the transmission system comprising:

a plurality of libraries for storing items containing information;

identification encoding means for retrieving the information in the items from the plurality of libraries and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data; and

transmitter means, coupled to the conversion means, for transmitting the formatted data to the premises selected by the user, wherein the premises selected by the user is not limited to a predetermined user premises.

2. A transmission system as recited in claim 1, wherein the plurality of libraries are geographically separated.

3. A transmission system as recited in claim 1, wherein the premises selected by the user is geographically separated from the accessing location.

4. A digital audio/video communication network comprising:

a reception system in data communication with a plurality of subscriber selectable receiving stations, the reception system comprising,

means for receiving compressed, digitized data representing at least one item of audio/video information at a non-real time rate,

means for storing a complete copy of the received compressed, digitized data, and

means, responsive to the stored compressed, digitized data, for transmitting a representation of the at least one item of audio/video information at a real-time rate to at least one of the plurality of subscriber selectable receiving stations, wherein said means for receiving, said means for storing, and said means for transmitting are positioned at the same location, and wherein the at least one of the plurality of subscriber selectable stations is located at a premises geographically separated from the location of the reception system.

5. A digital audio/video communication network as recited in claim 4, wherein the means for transmitting comprises a converter for decompressing the compressed digitized data representing the at least one item of audio/video information.

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6. A digital audio/video communication network as recited in claim 4, further comprising a processing station for formatting items of audio/video information as compressed, digitized data and transmitting the compressed, digitized data representing at least one item of audio/video information at the non-real time rate to the means for receiving.

7. A digital audio/video communication network as recited in claim 6, wherein the processing station comprises:

means for inputting items of audio/video information;

conversion means for placing each input item of audio/video information into a predetermined format as formatted data;

compression means for compressing the formatted data; and

transmitter means for sending compressed formatted data for the at least one item of audio/video information at the non-real time rate to the reception system.

8. A method of distributing audio/video information comprising:

transmitting compressed, digitized data representing a complete copy of at least one item of audio/video information at a non-real time rate from a central processing location to a local distribution system remote from the central processing location;

receiving, into a receiving means, the transmitted compressed, digitized data representing a complete copy of the at least one item;

storing, in a storing means, the received compressed, digitized data representing the complete copy of the at least one item at the local distribution system; and

in response to the stored compressed, digitized data, transmitting, using a transmitting means, a representation of the at least one item at a real-time rate to at least one of a plurality of subscriber selectable receiving stations coupled to the local distribution system, wherein the receiving means, the storing means, and the transmitting means are positioned at the same location, and wherein the at least one of the plurality of subscriber selectable stations is located at a premises geographically separated from the local distribution system.

9. A method as recited in claim 8, further comprising the step of decompressing the compressed, digitized data representing the complete copy of the at least one item of audio/video information before the transmitting step.

10. A method as recited in claim 9, wherein the decompressing step is performed in the local distribution system to produce the representation of the at least one item for transmission to the at least one of the plurality of subscriber selectable receiving stations.

11. A method of distributing audio/video information comprising:

formatting items of audio/video information as compressed digitized data at a central processing location;

transmitting compressed, digitized data representing a complete copy of at least one item of audio/video information from the central processing location;

receiving, into a receiving means, the transmitted compressed, digitized data representing a complete copy of the at least one item of audio/video information at a local distribution system;

storing, in a storing means, the received compressed, digitized data representing the complete copy of the at least one item at the local distribution system; and

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using the stored compressed, digitized data to transmit
using a transmitting means a representation of the at
least one item to at least one of a plurality of subscriber
selectable receiving stations coupled to the local dis-
tribution system, wherein the receiving means, the
storing means, and the transmitting means are posi- 5

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tioned at the same location, and wherein the at least one
of the plurality of subscriber selectable stations is
located at a premises geographically separated from the
location of the local distribution system.

* * * * *

EXHIBIT

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				12-MONTH PERIOD ENDING SEPTEMBER 30							
TEXAS EASTERN				2006	2005	2004	2003	2002	2001	Numerical Standing	
OVERALL CASELOAD STATISTICS	Filings*			3,658	3,583	3,860	4,072	3,610	3,452	U.S.	Circuit
	Terminations			3,623	3,538	4,243	3,487	4,458	4,819		
	Pending			3,079	3,035	2,983	3,358	2,825	3,706		
	% Change in Total Filings	Over Last Year			2.1					14	2
		Over Earlier Years				-5.2	-10.2	1.3	6.0	41	5
Number of Judgeships				8	8	8	8	7	7		
Vacant Judgeship Months**				.0	.0	9.1	4.2	19.3	10.0		
ACTIONS PER JUDGESHIP	FILINGS	Total	457	448	483	509	515	493	38	6	
		Civil	375	376	411	431	444	427	27	5	
		Criminal Felony	82	72	71	77	70	66	36	3	
		Supervised Release Hearings**	0	0	1	1	1	-	-	-	
	Pending Cases			385	379	373	420	404	529	45	6
	Weighted Filings**			550	511	518	529	492	492	13	3
	Terminations			453	442	530	436	637	688	45	7
	Trials Completed			21	21	21	26	22	22	39	6
MEDIAN TIMES (months)	From Filing to Disposition	Criminal Felony	9.2	8.3	8.4	7.5	8.9	8.0	52	7	
		Civil**	9.0	10.3	6.5	10.9	15.0	30.9	39	5	
	From Filing to Trial** (Civil Only)			17.7	15.9	15.4	17.0	14.0	15.9	12	2
OTHER	Civil Cases Over 3 Years Old**	Number	80	64	47	41	58	881			
		Percentage	3.2	2.6	1.9	1.4	2.4	26.1	18	2	
	Average Number of Felony Defendants Filed Per Case			1.6	1.7	1.7	1.7	1.4	1.7		
	Jurors	Avg. Present for Jury Selection	36.89	34.27	33.92	32.49	32.40	32.25			
		Percent Not Selected or Challenged	30.1	30.2	32.5	33.5	33.3	35.6			

2006 CIVIL AND CRIMINAL FELONY FILINGS BY NATURE OF SUIT AND OFFENSE													
Type of	TOTAL	A	B	C	D	E	F	G	H	I	J	K	L
Civil	3001	156	318	1276	27	27	94	282	217	253	227	2	122
Criminal*	650	10	188	79	195	66	14	22	16	24	12	11	13

* Filings in the "Overall Caseload Statistics" section include criminal transfers, while filings "By Nature of Offense" do not.

** See "Explanation of Selected Terms."

EXHIBIT

13

				12-MONTH PERIOD ENDING SEPTEMBER 30							
DELAWARE				2006	2005	2004	2003	2002	2001	Numerical Standing	
OVERALL CASELOAD STATISTICS	Filings*			1,077	1,190	1,797	1,362	2,028	1,004	U.S.	Circuit
	Terminations			1,419	1,448	1,516	1,507	1,478	1,020		
	Pending			1,501	1,853	2,085	1,836	1,999	1,477		
	% Change in Total Filings	Over Last Year			-9.5					74	6
		Over Earlier Years				-40.1	-20.9	-46.9	7.3	34	3
Number of Judgeships				4	4	4	4	4	4		
Vacant Judgeship Months**				.0	.0	.0	1.9	3.1	.0		
ACTIONS PER JUDGESHIP	FILINGS	Total	270	298	449	340	507	251	82	5	
		Civil	233	264	414	306	462	233	73	5	
		Criminal Felony	30	28	29	25	38	18	88	5	
		Supervised Release Hearings**	7	6	6	9	7	-	87	4	
	Pending Cases			375	463	521	459	500	369	48	5
	Weighted Filings**			367	422	534	424	516	379	71	4
	Terminations			355	362	379	377	370	255	69	4
	Trials Completed			15	20	19	23	18	16	65	3
	MEDIAN TIMES (months)	From Filing to Disposition	Criminal Felony	9.3	9.4	9.1	8.3	9.8	8.0	56	2
Civil**			16.8	10.9	14.0	11.2	8.2	12.6	91	5	
From Filing to Trial** (Civil Only)			26.0	23.5	26.0	24.0	22.5	21.0	49	3	
OTHER	Civil Cases Over 3 Years Old**	Number	142	156	65	66	99	77			
		Percentage	10.6	9.1	3.4	3.9	5.4	5.5	76	5	
	Average Number of Felony Defendants Filed Per Case			1.2	1.2	1.2	1.3	1.1	1.3		
	Jurors	Avg. Present for Jury Selection	39.60	39.82	38.50	34.98	33.84	32.68			
		Percent Not Selected or Challenged	24.1	22.8	20.9	24.0	24.4	19.9			

2006 CIVIL AND CRIMINAL FELONY FILINGS BY NATURE OF SUIT AND OFFENSE													
Type of	TOTAL	A	B	C	D	E	F	G	H	I	J	K	L
Civil	930	32	6	233	12	6	20	76	52	160	132	51	150
Criminal*	117	-	26	14	29	20	-	2	5	10	2	-	9

* Filings in the "Overall Caseload Statistics" section include criminal transfers, while filings "By Nature of Offense" do not.

** See "Explanation of Selected Terms."

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP

Plaintiff

v.

COMCAST CORPORATION, et al.

Defendants

§
§
§
§
§
§
§
§
§
§

Civil Action No. 2:05-cv-443

Judge T. John Ward
Jury

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP

Plaintiff

v.

CHARTER COMMUNICATIONS, INC., et al.

Defendants

§
§
§
§
§
§
§
§
§
§

Civil Action No. 2:06-cv-223

Judge T. John Ward
Jury

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP

Plaintiff

v.

TIME WARNER CABLE, LLC, et al.

Defendants

§
§
§
§
§
§
§
§
§
§

Civil Action No. 2:05-cv-224

Judge T. John Ward
Jury

COMCAST'S RESPONSE TO THE MOTION TO CONSOLIDATE CASES

Comcast Corporation, Comcast Cable Communications, LLC, and Comcast of Plano, LP (collectively, "Comcast"), notes that Defendants Time Warner Cable, LLC, Time Warner Entertainment Company, LP, Time Warner Entertainment-Advance/Newhouse Partnership, Time Warner New York Cable, LLC, Coxcom, Inc., Charter Communications, Inc., Charter Communications Operating, LLC, CSC Holdings, Inc., and Cablevision Systems Corporation have moved to consolidate for pre-trial purposes only Civil Action No. 2:06-cv-223 (the "223 Case") and Civil Action No. 2:06-cv-224 (the "224 Case") with Civil Action No. 2:05-cv-443 (the "443 Case"). Comcast does not object to the consolidation of the 223 Case and the 224 Case with the 443 Case for pre-trial purposes.

Respectfully submitted,

/s/ Jennifer Haltom Doan

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**ATTORNEYS FOR DEFENDANTS
COMCAST CORPORATION, COMCAST
CABLE COMMUNICATIONS, LLC, and
COMCAST OF PLANO, LP**

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). All other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by certified mail, return receipt requested, on this 11th day of April, 2007.

/s/ Jennifer Haltom Doan
Jennifer Haltom Doan

UNITED STATES DISTRICT COURT

EASTERN

DISTRICT OF

TEXAS

REMBRANDT TECHNOLOGIES, LP

NOTICE

V.

COMCAST CORPORATION, ET AL

CASE NUMBER: 2:05cv443(TJW)

TYPE OF CASE:

☒ **CIVIL**

☐ **CRIMINAL**

TAKE NOTICE that a proceeding in this case has been set for the place, date, and time set forth below:

PLACE

United States District Court

100 E. Houston

Marshall, Texas 75670

ROOM NO.

Judge Chad Everingham's Courtroom

DATE AND TIME

April 27, 2007, 10:00 a.m.

TYPE OF PROCEEDING

CLAIM CONSTRUCTION HEARING

TAKE NOTICE that a proceeding in this case has been continued as indicated below:

PLACE

DATE AND TIME PREVIOUSLY
SCHEDULED

CONTINUED TO DATE
AND TIME

David J. Maland

US MAGISTRATE JUDGE OR CLERK OF COURT

April 17, 2007

DATE

Deborah Latham

(BY) DEPUTY CLERK

TO: ALL COUNSEL OF RECORD

ATTENTION: STAFF OF JUDGE CHAD EVERINGHAM

ACKNOWLEDGMENT

NOTICE TO COUNSEL: Please sign in the space provided below and return to the court by facsimile, (903) 935-2295, within three (3) days of your receipt of the enclosed notice.

I acknowledge receipt of the indicated notice on the date shown below.

Case No. _____

Signature of Atty. _____ Date _____

Print Name of Atty. _____

Counsel for _____
(Name of Party)

Type of Proceeding: _____
(e.g., Scheduling Conference)

Date of Proceeding: _____

Time of Proceeding: _____

Location of Proceeding: _____

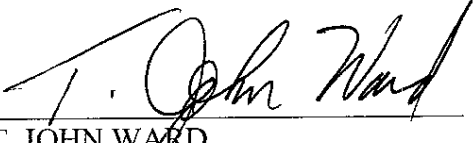
**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP §
§
V. § **NO. 2:05cv443(TJW)**
§
COMCAST CORPORATION, ET AL §

ORDER

This case is referred to United States Magistrate Judge Chad Everingham in accordance with the assignments made by General Order 07-03. The magistrate judge shall conduct pre-trial proceedings pursuant to 28 U.S.C. § 636

The referral magistrate judge is designated to hear and determine all pre-trial matters and motions in connection with such suits except those motions excepted in 28 U.S.C. § 636(b)(1)(A). The magistrate judge is designated to conduct hearings, including evidentiary hearings, and to submit to the presiding judge findings of fact and recommendations for the disposition of all matters excepted under 28 U.S.C. § 636 (b)(1)(A). SIGNED this 18th day of April, 2007.



T. JOHN WARD
UNITED STATES DISTRICT JUDGE

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:05-CV-443-TJW
)	
COMCAST CORPORATION, ET AL.)	
)	
Defendants.)	
_____)	

REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:06-CV-506-TJW
)	
COMCAST CORPORATION, ET AL.)	
)	
Defendants.)	
_____)	

REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:06-CV-369-TJW
)	
TIME WARNER CABLE, INC.)	
)	
Defendant.)	
_____)	

REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:06-CV-224-TJW
)	
TIME WARNER CABLE, INC.)	

)	
Defendant.)	
_____)	
REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:06-CV-507-TJW
)	
CHARTER COMMUNICATIONS, INC.,)	
ET AL.)	
)	
Defendants.)	
_____)	
REMBRANDT TECHNOLOGIES, LP)	
)	
Plaintiff,)	
)	
v.	)	Case No. 2:06-CV-223-TJW
)	
CHARTER COMMUNICATIONS, INC.,)	
ET AL.)	
)	
Defendants.)	
_____)	

NOTICE OF DEVELOPMENT

Defendants Charter Communications, Inc., Charter Communications Operating, LLC., CoxCom, Inc., and Time Warner Cable, Inc. provide this notice of development. Attached is a Notice of Hearing issued by the Judicial Panel on Multidistrict Litigation, calendaring for hearing on May 31, 2007, the motion of CoxCom, Inc. for transfer and consolidation of the Rembrandt Technologies, LP, patent litigation pursuant to 28 U.S.C. §1407.

Dated: April 18th, 2007.

Respectfully Submitted

/s/ Allen F. Gardner
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**ATTORNEYS FOR CHARTER
COMMUNICATIONS, INC., LLP,
CHARTER COMMUNICATIONS
OPERATING, LLC, COXCOM, INC.,
AND TIME WARNER CABLE, INC.**

CERTIFICATE OF SERVICE

I hereby certify that the following counsel of record who are deemed to have consented to electronic service are being served this 18th day of April, 2007, with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3). Any other counsel of record will be served by first class mail on this same date.

/s/ Allen F. Gardner
Allen F. Gardner

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

V.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS; LLC; and
COMCAST OF PLANO, LP,

Defendants.

Civil Action No. 2:05-CV-443-TJW-CE

Jury demand

**COMCAST’S MOTION TO STAY PENDING RESOLUTION OF MOTION TO
CONSOLIDATE BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT
LITIGATION AND MOTION FOR EXPEDITED CONSIDERATION**

Defendants Comcast Corporation, Comcast Cable Communications LLC, and Comcast of Plano, LP (collectively “Comcast”) move this Court to stay all proceedings in this action pending resolution of a Motion to Transfer and Consolidate Rembrandt Technologies, LP Patent Litigation Pursuant to 28 U.S.C. § 1407 (“MDL Motion”), filed on March 9, 2007 and currently set for hearing on May 31, 2007 before the Judicial Panel on Multidistrict Litigation (“MDL Panel”). Judicial economy and efficiency will be promoted by staying proceedings in the present case – including the claim construction hearing recently scheduled for April 27, 2007¹ – until the MDL Panel determines whether a single judge should preside over pretrial proceedings of the fourteen related, Rembrandt patent cases.

Comcast further moves the Court for expedited briefing and consideration of this motion to stay, based on the currently scheduled *Markman* hearing, as the normal briefing schedule does not allow the Court to decide Comcast's present motion to stay pending resolution of the MDL

¹ Comcast recently requested that the claim construction hearing be moved from the April 27, 2007, date to accommodate counsel's schedule. This motion to stay requests the separate relief of a stay of all proceedings pending decision by the MDL.

Motion before the *Markman* hearing date.

**BRIEF IN SUPPORT OF MOTION TO STAY AND FOR EXPEDITED
CONSIDERATION**

I. INTRODUCTION

Comcast respectfully requests that the Court temporarily stay this case pending resolution of the MDL Motion, which another cable-company defendant in a parallel Rembrandt case filed over a month ago on March 9, 2007. The MDL Panel will hear the MDL Motion six weeks from now, on May 31, 2007. Proceeding with the present action, and in particular the *Markman* hearing, despite the pendency of the MDL Motion will cause the parties and the Court to expend substantial resources – in an effort that may well be rendered moot depending on the MDL Panel’s decision. Moreover, temporarily staying this action until the MDL Panel’s decision will also minimize any risk of inconsistent rulings on important pretrial issues, particularly claim construction, that may apply to all the parallel Rembrandt cases. Should the MDL Panel transfer this case, this Court will be divested of all jurisdiction of this matter for pretrial purposes, and a single judge will be assigned to determine these issues in all of the Rembrandt cases pending nationwide. A temporary stay pending the MDL Panel’s decision will alleviate the potential for wasting judicial and party resources and for unnecessary procedural complexity.

Further, a temporary stay will not prejudice anyone. The originally scheduled date for the *Markman* hearing in this action was vacated upon the disqualification of Rembrandt’s former lead counsel, and no further case dates other than the *Markman* hearing have been rescheduled. Without a current schedule, a temporary stay pending the MDL Panel’s determination on whether to grant the MDL Motion will not adversely affect Rembrandt.

Staying this case pending resolution of the MDL Motion will promote judicial efficiency, benefit the parties, and ensure a fair and economical pretrial process – regardless of the outcome of the MDL Motion – without detriment. Thus the Court should grant Comcast’s motion.

II. RELEVANT BACKGROUND

The present action filed by Rembrandt against the Comcast defendants is one of fourteen parallel actions involving patent claims asserted by Rembrandt against the major cable

companies in the United States, as well as other television-network and electronics-manufacturing defendants.² In the present case, a *Markman* hearing had been scheduled for February 8, 2007. The Court disqualified Rembrandt's then-lead counsel based on conflicts of interest, and (per party stipulation) suspended all deadlines pending appointment of new counsel. *See Orders* (Comcast Dkt. nos. 140, 142, 144, 145).

On March 9, 2007, CoxCom moved the MDL Panel for an order consolidating and transferring the fourteen related Rembrandt patent actions. *See* CoxCom Motion to Transfer And Consolidation of Rembrandt Technologies, LP Patent Litigation Pursuant to 28 U.S.C. §1407, MDL Docket No. 1848, filed March 9, 2007 (Comcast, Dkt. no. 153) at 2. Including the present action, Rembrandt has asserted patent claims against twenty-nine parties, in fourteen related actions, in three judicial districts – the Eastern District of Texas, the District of Delaware, and the Southern District of New York. *Id.* Nine of those actions involve some or all of the four patents asserted against Comcast in this case. *See id.* at Exh. B. The remaining five patents are asserted against Comcast in related Civil Action No. 2:06-cv-506-TJW and against other parties in four related actions. *Id.* There have been no substantive orders issued in any of these actions, and no claim construction hearings have been held. *Id.* at 4.

On April 12, 2007, the MDL Panel set CoxCom's MDL Motion for hearing on May 31, 2007 at 9:30 a.m. *See* Exh. A (Notice of Hearing Session) at 1. Five days later, this Court scheduled a *Markman* hearing for April 27, 2007, before Magistrate Judge Chad Everingham. *See* Notice dated April 17, 2007 (Comcast Dkt. no. 159). Also currently pending before this Court are motions by other cable-company defendants in the parallel Eastern District of Texas Rembrandt cases to consolidate the present case with those matters for pretrial purposes.³

² In the interests of brevity, Comcast will not recount the history of each of the various Rembrandt lawsuits. The jurisdictions and parties to these actions are identified and described on pages 4-9 and in Exhibits A-B to CoxCom's Motion to Transfer and Consolidate. *See Comcast* Dkt. no. 153.

³ Charter Communications, CoxCom, Time Warner Cable, and related entities – each a defendant in cases filed by Rembrandt in the Eastern District of Texas alleging infringement of the same patents asserted against Comcast – moved the Court to consolidate all Rembrandt cases for pretrial purposes. Comcast agrees that such consolidation is appropriate and would save party and judicial resources and accordingly did not object to these consolidation motions. *See Comcast* Dkt. no. 158.

III. ARGUMENT

The Court has the sole discretion to stay proceedings where it serves the interests of judicial economy and efficiency. *See Rivers v. Walt Disney Co.*, 980 F. Supp. 1358, 1360 (C.D. Cal. 1997); *see also Alza Corp. v. Wyeth*, 2006 WL 3500015 *2 (E.D. Tex. Nov. 21, 2006). In exercising that discretion to stay an action, courts often consider: (1) judicial resources that will be saved by avoiding duplicative litigation if cases are in fact coordinated; (2) hardship and inequity to the moving party if the action is not stayed; and (3) potential prejudice to the non-moving party. *See Rivers*, 980 F. Supp. at 1360; *Alza Corp.*, 2006 WL 3500015 at *2. With the MDL Motion pending – in addition to a motion to consolidate before this Court – efficiency and economy dictate staying the present action.

A. A Temporary Stay Will Promote the Fair and Efficient Adjudication of this Action

Substantial judicial and party resources may be wasted if substantive proceedings, such as a *Markman* hearing, proceed in this case while the MDL motion is pending. If granted, the MDL Motion will divest this Court of all pretrial jurisdiction in this matter, including construction of the claims of the asserted patents. *See* 28 U.S.C. § 1407; *Astarte Shipping Co. v. Allied Steel & Export Serv.*, 767 F.2d 86, 87 (5th Cir. 1985). As the Fifth Circuit has stated:

A transfer under section 1407 transfers the action lock, stock, and barrel. The transferee district court has the power and the obligation to modify or rescind any orders in effect in the transferred case which it concludes are incorrect. In addition, when the [Judicial Panel on Multidistrict Litigation] orders a case transferred, the transferor district court is deprived of jurisdiction until the case is returned to it.

Id. Such complete transfer promotes the purpose of multidistrict litigation – to coordinate the pretrial management of actions sharing common facts and issues of law in a just and efficient manner. *See* 28 U.S.C. § 1407(a). Actions involving overlapping patents are particularly well-suited for consolidation to promote efficiency and avoid duplicative or potentially inconsistent pretrial rulings, given the shared questions concerning the technology underlying the patents, the validity of the patents, claim construction and issues of infringement. *See* 28 U.S.C. § 1407; *In re Acacia Media Techs. Corp Patent Litig.*, 360 F. Supp. 2d 1377, 1379 (J.P.M.L. 2005); *In re MLR, LLC, Patent Litig.*, 269 F. Supp. 2d 1380, 1381 (J.P.M.L. 2003).

Because of the efficiency and consistency reasons underlying coordinated multidistrict litigation, courts have routinely stayed actions where motions to transfer are pending before the MDL Panel. *See, e.g., Hertz Corp. v. Gator Corp.*, 250 F. Supp. 2d 421, 428 (D.N.J. 2003), *Rivers*, 980 F. Supp. at 1360; *see also Miranda v. Ocwen Financial Corp.*, 2007 U.S. Dist. LEXIS 23389 (W.D. Tex., March 30, 2007) at *3; *Anderson v. Merck & Co.*, 2007 U.S. Dist. LEXIS 1261 (S.D. Tex., January 5, 2007) at *3; *Texas Ex Rel Ven-A-Are v. Abbott Labs., Inc.*, 2005 U.S. Dist. LEXIS 42434 (W.D. Tex., December 5, 2005) at *3-6; *Network-1 Security Solutions, Inc. v. D-Link Corporation*, Civil Action No. 6:05-CV-291 (E.D. Tex. Nov. 3, 2005) (“It would be an inefficient use of judicial resources to take action in this case before the Judicial Panel on Multidistrict Litigation decides the transfer issue.”) (attached as Exhibit C); *Blackshire v. Pfizer, Inc.*, Civil Action No. 1:05-CV-383 (E.D. Tex. Aug. 8, 2005) (attached as Exhibit D); *Falgoust v. Microsoft*, 2000 U.S. Dist. LEXIS 5417 (E.D. La., April 20, 2000) at *2-8. Without a stay, the Court loses the potential efficiencies that would be created by having pretrial issues involving common facts and law decided by a single judge. *See* 28 U.S.C. § 1407.

Indeed, in parallel cases concerning *these very patents* and subject to the same MDL Motion, the District Court for the District of Delaware *sua sponte* issued an order staying all proceedings in its own Rembrandt cases pending the outcome of the MDL Motion. *See* Exh. B (*Rembrandt* Actions, Order Staying Civil Actions, filed March 26, 2007). In that order, the Honorable Gregory Sleet noted that “it is in the interests of justice and judicial economy to stay the above-captioned cases until the Motion is resolved.” *Id.* The same statement applies with equal force here.

Staying this case pending resolution of the MDL Motion will ensure that the resources of the Court and of the parties are not expended unnecessarily. Should the MDL Panel grant the MDL Motion, the fourteen cases will be transferred to one court for pretrial purposes so that the substantial common questions of law and fact – such as claim construction for the asserted patents– that predominate these actions can be addressed in a coordinated manner. Each affected party will be afforded the proper opportunity to participate in that process.

By contrast, proceeding with the *Markman* hearing prior to resolution of the MDL

Motion increases the risk of wasting judicial resources and compromising justice. First, should the MDL Panel grant the MDL Motion, the parties and the Court may be forced to perform duplicative work and thereby unnecessarily expend substantial resources. A relevant and instructive example is the MDL Panel's recent decision to consolidate and transfer the "Katz" patent litigations after the Honorable David Folsom had already conducted a *Markman* hearing in *Katz v. Citibank et al.* (E.D. Tex. Case No. 5:05-cv-00142-DF). *See In re Katz Interactive Call Processing Patent Litigation*, 2007 WL 899462 (J.P.M.L. March 20, 2007) (attached as Exhibit E). Indeed, the MDL Panel in that instance transferred the Katz cases even though the petitioners for MDL consolidation filed their MDL motion, *a month after* Judge Folsom had already held his *Markman* hearing. In the present case, a temporary stay pending the MDL's panel's decision will ensure that the substantial effort and resources put into the *Markman* hearing will not be for naught.

Second, construction of the claim terms in the present dispute may or may not bind either the other parties or the court in the consolidated action. As discussed above, the transferee court presiding over an MDL matter has the authority to revisit any prior pretrial orders. *See Astarte Shipping*, 767 F.2d at 87; *see also Pinney v. Nokia, Inc.*, 402 F.3d 430, 452-453 (4th Cir. 2005) (transferee court for MDL litigation could decide motion to dismiss on preemption grounds even though, in one transferred case, transferor court had already denied motions to dismiss); *In re Multi-Piece Rim Products Liability Litigation*, 653 F.2d 671, 676 (D.C. Cir. 1981) ("[The transferee] judge has the power to set aside pretrial rulings of transferor courts, and courts performing auxiliary roles must be guided by the transferee judge's rulings."); *Degulis v. LXR Biotech, Inc.*, 928 F. Supp. 1301, 1309 (S.D.N.Y. 1996) ("A transferee court ... has the power to modify interlocutory orders entered by the transferor court prior to transfer under 28 U.S.C. § 1407.") (citation omitted).

Further, should the MDL Motion be granted, it will likely occur before a *Markman* Order in this action is finalized. Conducting a *Markman* hearing and construing the terms at issue here will require substantial investments of time and resources. For the four patents at issue in this case, the parties seek construction of some twenty-six disputed claim terms. *See Second*

Amended Joint Claim Construction and Prehearing Statement dated Jan 22, 2007 (*Comcast* Dkt. no. 136). Not including exhibits and other supporting materials, the *Markman* briefs alone total almost 100 pages. And once the Court issues its Order construing those claims, the parties by right have the opportunity to appeal that Order to the District Court within ten days. *See* 28 U.S.C. § 636(b)(1)(A); E.D. Tex. Local Rules Appendix B, Rule 4(A). Therefore, should the MDL Motion be granted, the Court may lose jurisdiction over this matter before any claim construction ruling can be entered by the District Court.

Moreover, currently pending before this Court is the motion by Coxcom, Charter, and Time Warner to consolidate the present case with the parallel Rembrandt cases in the Eastern District of Texas for pretrial purposes. The reasons articulated in the briefing in support of consolidation also support vacating and temporarily staying the scheduled *Markman* hearing here. If the MDL Panel declines to transfer the actions, the Court still must decide whether, in the interest of efficiency and conservation of judicial resources, it should consolidate the actions pending against Comcast, Time Warner, Charter, and CoxCom. Therefore, staying the current *Markman* hearing pending the outcome of the MDL Motion and consolidation motion is warranted, because as the Court recognized in its Order disqualifying Rembrandt's counsel, "there is a likelihood" that the claim construction proceedings in the Comcast action "could, as a practical matter, prejudice Time Warner in subsequent proceedings." *See* Memorandum Opinion and Order, filed February 8, 2007 (*Comcast* Dkt. no. 144).

B. Rembrandt Will Suffer No Significant Prejudice From A Stay

Rembrandt will not be prejudiced by a stay, regardless of the decision by the MDL Panel. Even if the MDL Panel declines to consolidate and transfer all of the pending Rembrandt actions, Rembrandt will have experienced no significant delay. Other than the *Markman* hearing, there are currently no other dates scheduled in this action. Rembrandt cannot argue that a minor delay in scheduling pending a ruling from the MDL Panel outweighs the substantial interests of both the Court and the parties in preserving resources and having issues conclusively and comprehensively determined.

Moreover, any impact related to the duplicity of the parallel Rembrandt cases on identical

patents, based on identical theories and spread around the country, has been of Rembrandt's own making. Rembrandt chose to file separate lawsuits in different jurisdictions on the same patents. Comcast asks only that the MDL Panel, and this Court, be given the chance to address the issues raised by these separate actions in a single and unified manner, and to refrain from taking actions that would unnecessarily complicate or result in duplicative or wasted resources. The complexities caused by Rembrandt's litigation strategy should not preclude temporarily staying this action pending the MDL Panel's decision.

C. Expedited Consideration Is Required

Due to the currently scheduled *Markman* hearing for April 27, 2007, Comcast's motion to stay should be heard on an expedited basis. The *Markman* hearing is the only presently scheduled deadline for this case, and is the basis for this motion to stay. Conducting the *Markman* hearing prior to the MDL Panel's decision on the MDL Motion could lead to significant adverse consequences against the parties and against judicial efficiency, as discussed above.

Further, the standard schedule does not afford the opportunity for Comcast's motion to stay to be heard timely and in a manner to avoid the adverse consequences discussed in this motion. Because of the potential impact of the MDL Motion, and the serious consequences of holding a *Markman* hearing prior to MDL Panel's decision, Comcast submits that this motion should be heard as soon as possible.

IV. CONCLUSION

Temporarily staying this action pending resolution of the Motion to Transfer and Consolidate currently pending before the MDL Panel will promote judicial efficiency. For the foregoing reasons, Comcast hereby requests that the Court grant its motion and stay further proceedings until such time as the MDL Panel has issued its ruling on the pending MDL Motion.

Respectfully submitted,

/s/Jennifer Haltom Doan

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**ATTORNEYS FOR DEFENDANTS
COMCAST CORPORATION, COMCAST
CABLE COMMUNICATIONS, LLC,
COMCAST OF PLANO**

CERTIFICATE OF CONFERENCE

Counsel for Comcast has conferred with Plaintiff's counsel in good faith, and Plaintiff is opposed to this motion.

/s/Jennifer Haltom Doan

Jennifer Haltom Doan

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). All other counsel of record not deemed to have consented to electronic service with a true and correct copy of the foregoing by certified mail, return receipt requested, on this 19th day of April, 2007.

/s/Jennifer Haltom Doan

Jennifer Haltom Doan

EXHIBIT A

**UNITED STATES OF AMERICA
JUDICIAL PANEL ON MULTIDISTRICT LITIGATION**

CHAIRMAN:
Judge Wm. Terrell Hodges
United States District Court
Middle District of Florida

MEMBERS:
Judge D. Lowell Jensen
United States District Court
Northern District of California

Judge J. Frederick Motz
United States District Court
District of Maryland

Judge Robert L. Miller, Jr.
United States District Court
Northern District of Indiana

Judge Kathryn H. Vratil
United States District Court
District of Kansas

Judge David R. Hansen
United States Court of Appeals
Eighth Circuit

Judge Anthony J. Scirica
United States Court of Appeals
Third Circuit

DIRECT REPLY TO:

Jeffery N. Lüthi
Clerk of the Panel
One Columbus Circle, NE
Thurgood Marshall Federal
Judiciary Building
Room G-255, North Lobby
Washington, D.C. 20002

Telephone: [202] 502-2800
Fax: [202] 502-2888

<http://www.jpml.uscourts.gov>

April 12, 2007

NOTICE OF HEARING SESSION

Dear Counsel:

Pursuant to the order of the Judicial Panel on Multidistrict Litigation filed today, you are hereby notified that a hearing session has been scheduled to consider various matters pursuant to 28 U.S.C. § 1407.

DATE OF HEARING SESSION: May 31, 2007


LOCATION OF HEARING SESSION: Lloyd D. George United States Courthouse
Courtroom 7C, 7th Floor
333 Las Vegas Boulevard South
Las Vegas, Nevada 89101

TIME OF HEARING SESSION: In those matters designated for oral argument, counsel presenting oral argument must be present at **8:30 a.m.** in order for the Panel to allocate the amount of time for oral argument. Oral argument will commence at **9:30 a.m.**

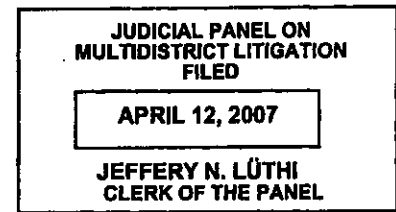
Please direct your attention to the enclosed Hearing Session Order and Schedule of Matters for Hearing Session for a listing of the matters scheduled for consideration at this hearing session.

- Section A of this Schedule lists the matters designated for oral argument.
- Section B of this Schedule lists the matters that the Panel has determined to consider **without oral argument**, pursuant to Rule 16.1(c), R.P.J.P.M.L., 199 F.R.D. 425, 439 (2001).

For those matters listed on Section A of the Schedule, the enclosed blue "Notice of Presentation or Waiver of Oral Argument" must be returned to this office no later than **May 14, 2007**. Note the procedures governing Panel oral argument which are outlined on the enclosed "Procedures for Oral Argument before the Judicial Panel on Multidistrict Litigation." These procedures are strictly adhered to and your cooperation is appreciated.

Very truly,

Jeffery N. Lüthi
Clerk of the Panel

c: Clerk, U.S. District Court for the District of Nevada



BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

***WM. TERRELL HODGES, CHAIRMAN, D. LOWELL JENSEN, J.
FREDERICK MOTZ, ROBERT L. MILLER, JR., KATHRYN H. VRATIL,
DAVID R. HANSEN AND ANTHONY J. SCIRICA, JUDGES OF THE
PANEL***

HEARING SESSION ORDER

IT IS ORDERED that on May 31, 2007, a hearing session will be held in Las Vegas, Nevada, to consider the matters on the attached Schedule under 28 U.S.C. § 1407.

IT IS FURTHER ORDERED that at said hearing session the Panel may, on its own initiative, consider transfer of any or all of the actions in those matters to any district or districts.

IT IS FURTHER ORDERED that at said hearing session the matters listed on Section A of the attached Schedule shall be designated for oral argument.

IT IS FURTHER ORDERED that at said hearing session the matters listed on Section B of the attached Schedule shall be considered without oral argument, pursuant to Rule 16.1(c), R.P.J.P.M.L., 199 F.R.D. 425, 439 (2001). The Panel reserves the prerogative, on any basis including submissions of parties pursuant to Panel Rule 16.1(b), to issue a subsequent notice designating any of those matters for oral argument.

IT IS FURTHER ORDERED that the Clerk of the Judicial Panel on Multidistrict Litigation shall direct notice of this hearing session to counsel for all parties involved in the matters on the attached Schedule.

FOR THE PANEL:



Wm. Terrell Hodges
Chairman

SCHEDULE OF MATTERS FOR HEARING SESSION
May 31, 2007 -- Las Vegas, Nevada

SECTION A
MATTERS DESIGNATED FOR ORAL ARGUMENT

MDL-1835 -- In re Brian L. Roberts Litigation

Motion of plaintiff Brian L. Roberts for centralization of the following actions in the United States District Court for the Southern District of New York:

Southern District of New York

Brian L. Roberts v. Sony Corp., et al., C.A. No. 1:06-6337

District of Utah

Brian L. Roberts v. Sony, et al., C.A. No. 2:04-673

MDL-1836 -- In re Mirapex Products Liability Litigation

Motion of defendants Boehringer Ingelheim Pharmaceuticals, Inc., and Pfizer Inc. for centralization of the following actions in the United States District Court for the Southern District of New York or, in the alternative, the United States District Court for the District of Connecticut or other suitable United States district court:

Northern District of California

Therese Bottiglieri v. Pfizer Inc., et al., C.A. No. 3:06-3248

District of Maryland

William David Livingston, et al. v. Boehringer Ingelheim Pharmaceuticals, Inc., et al.,
C.A. No. 1:06-1887

District of Minnesota

Gary Selinsky, et al. v. Boehringer Ingelheim Pharmaceuticals, Inc., et al.,
C.A. No. 0:06-873

Robert M. Zwayer, et al. v. Boehringer Ingelheim Pharmaceuticals, Inc., et al.,
C.A. No. 0:06-874

Schedule of Matters for Hearing Session, Section A
Las Vegas, Nevada

p. 14

MDL-1848 -- In re Rembrandt Technologies, LP, Patent Litigation

Motion of defendant CoxCom, Inc., for centralization of the following actions in the United States District Court for the District of Delaware:

District of Delaware

Rembrandt Technologies, LP v. Cablevision Systems Corp., et al., C.A. No. 1:06-635
Coxcom, Inc. v. Rembrandt Technologies, LP, C.A. No. 1:06-721
Rembrandt Technologies, LP v. CBS Corp., C.A. No. 1:06-727
Rembrandt Technologies, LP v. NBC Universal, Inc., C.A. No. 1:06-729
Rembrandt Technologies, LP v. ABC, Inc., C.A. No. 1:06-730
Rembrandt Technologies, LP v. Fox Entertainment Group, Inc., et al., C.A. No. 1:06-731

Southern District of New York

Rembrandt Technologies, LP v. Adelphia Communications Corp., et al.,
Bky. Advy. No. 1:06-1739
Rembrandt Technologies, LP v. Adelphia Communications Corp., C.A. No. 1:07-214

Eastern District of Texas

Rembrandt Technologies, LP v. Comcast Corp., et al., C.A. No. 2:05-443
Rembrandt Technologies, LP v. Sharp Corp., et al., C.A. No. 2:06-47
Rembrandt Technologies, LP v. Charter Communications, Inc., et al., C.A. No. 2:06-223
Rembrandt Technologies, LP v. Time Warner Cable, Inc., C.A. No. 2:06-224
Rembrandt Technologies, LP v. Time Warner Cable, Inc., C.A. No. 2:06-369
Rembrandt Technologies, LP v. Comcast Corp., et al., C.A. No. 2:06-506
Rembrandt Technologies, LP v. Charter Communications, Inc., et al., C.A. No. 2:06-507

MDL-1849 -- In re C.H. Robinson Worldwide, Inc., Overtime Pay Litigation

Motion of plaintiffs for centralization of the following actions in the United States District Court for the Northern District of Illinois or, in the alternative, the United States District Court for the District of Minnesota:

Northern District of Alabama

Donna Eddy, et al. v. C.H. Robinson Worldwide, Inc., C.A. No. 2:06-4926

EXHIBIT B

Case 1:06-cv-00635-GMS Document 27 Filed 03/26/2007 Page 1 of 2

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-635 GMS

CABLEVISION SYSTEMS CORP. :

COXCOM, INC. :

v. : Civil Action No. 06-721 GMS

REMBRANDT TECHNOLOGIES LP :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-727 GMS

CBS CORPORATION :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-729 GMS

NBC UNIVERSAL INC. :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-730 GMS

ABC, INC. :

REMBRANDT TECHNOLOGIES LP :

v. : Civil Action No. 06-731 GMS

FOX ENTERTAINMENT GROUP, INC. :

ORDER STAYING CIVIL ACTIONS

WHEREAS, the above-captioned civil actions were filed in the United States District Court for the District of Delaware and assigned to the Honorable Gregory M. Sleet;

WHEREAS, on or about March 13, 2007, a Motion for Transfer and Consolidation of the Rembrandt Technologies LP Patent Litigation (the "Motion") was filed before the Judicial Panel on Multidistrict Litigation; and

WHEREAS, the court concludes that it is in the interest of justice and judicial economy to stay the above-captioned cases until the Motion is resolved;

IT IS HEREBY ORDERED that:

The above-captioned cases are hereby STAYED pending resolution of the Motion for Transfer and Consolidation currently pending before the Judicial Panel on Multidistrict Litigation.

March 26, 2007

/s/ Gregory M. Sleet

UNITED STATES DISTRICT JUDGE

EXHIBIT C

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

**NETWORK-1 SECURITY SOLUTIONS,
INC.**

Plaintiff,

vs.

**D-LINK CORPORATION AND D-LINK
SYSTEMS, INC.,**

Defendants.

§ § 87(2)(b), 87(2)(g)

CASE NO. 6:05-CV-291

ORDER

Before the Court are Defendant D-Link Corporation's Motion to Dismiss for Insufficiency of Service of Process or Transfer Venue or to Stay the Case (Docket No. 17) and Defendant D-Link Systems, Inc.'s motion in which they join in D-Link Corporation's Motion to Dismiss or Transfer Venue or to Stay the Case (Docket No. 18).

The Court has taken no action in this case in light of the fact that a motion to transfer is presently before the Judicial Panel on Multidistrict Litigation. It would be an inefficient use of judicial resources to take action in this case before the Judicial Panel on Multidistrict Litigation decides the transfer issue. Accordingly, all pretrial proceedings are hereby **STAYED** pending a transfer decision by the Judicial Panel on Multidistrict Litigation.

EXHIBIT D

EXHIBIT E

Westlaw.

--- F.Supp.2d ---

Page 1

--- F.Supp.2d ---, 2007 WL 899462 (Jud.Pan.Mult.Lit.)
(Cite as: --- F.Supp.2d ---)

In re Katz Interactive Call Processing Patent
Litigation
Jud.Pan.Mult.Lit.,2007.
Only the Westlaw citation is currently available.
Judicial Panel on Multidistrict Litigation.
In re KATZ INTERACTIVE CALL PROCESSING
PATENT LITIGATION
No. MDL-1816.

March 20, 2007.

Before WM. TERRELL HODGES,^{FN*} Chairman,
D. LOWELL JENSEN,* J. FREDERICK MOTZ,*
ROBERT L. MILLER, Jr., KATHRYN H.
VRATIL DAVID R. HANSEN and ANTHONY J.
SCIRICA, Judges of the Panel.

FN* Judges Hodges, Jensen and Motz took
no part in the decision of this matter.

TRANSFER ORDER

MILLER.

*1 This litigation presently consists of the 25
actions listed on Schedule A and pending in two
districts as follows: twenty actions in the Eastern
District of Texas and five actions in the District of
Delaware. The patents involved in these actions
relate to the integration of telephone systems with
computer databases and/or live operator call centers
to provide "interactive call processing" or "
interactive voice response." Now before the Panel
are two motions, pursuant to 28 U.S.C. § 1407,
seeking centralization of all or a subset of these 25
actions.^{FN1}

FN1. An additional action-*Ronald A. Katz
Technology Licensing, LP v. PNC
Financial Services Group, Inc., et al.*, E.D.
Texas, C.A. No. 9:06-200-was included on
the initial Section 1407 motion. The Panel

has been notified that this action has been
settled and dismissed. Accordingly, the
question of inclusion of this action in
MDL-1816 proceedings is moot.

The Panel also has been notified that a
potentially related action has been filed in
the District of Delaware. In light of the
Panel's disposition of this docket, this
action will be treated as a potential
tag-along action. See Rules 7.4 and 7.5,
R.P.J.P.M.L., 199 F.R.D. 425, 435-36
(2001).

In the first motion, the Target defendants ^{FN2} seek
centralization under Section 1407 of all actions in
the Central District of California before Judge R.
Gary Klausner, who has judicial experience with
several patents involved in these MDL-1816
actions. Eleven groups of affiliated defendants
support the motion; some of these defendants
alternatively suggest selection of either the District
of Delaware or the Eastern District of Texas as
transferee district. The patent holder plaintiff
Ronald A. Katz Technology Licensing, L.P.
(RAKTL) opposes centralization. If the Panel
deems centralization appropriate, RAKTL opposes
inclusion of the Texas *Citibank* action in Section
1407 proceedings, but RAKTL supports selection
of either the Texas or Delaware districts as
transferee forum for the remaining actions. Twelve
groups of affiliated defendants also oppose
centralization; if the Panel deems centralization
appropriate, some of these defendants oppose
inclusion of the Texas *Citibank* and *Discover*
actions in any MDL-1816 proceedings and/or
alternatively support centralization in one of the
three suggested transferee fora.

FN2. Target Corp., Target Bank, and
Target National Bank.

In the second motion, a defendant in one Texas
action, Global Crossing Telecommunications, Inc.

--- F.Supp.2d ----

--- F.Supp.2d ----, 2007 WL 899462 (Jud.Pan.Mult.Lit.)
(Cite as: --- F.Supp.2d ----)

(Global Crossing), seeks centralization of only two MDL-1816 actions-the "teleconferencing" actions now pending respectively in the District of Delaware and Eastern District of Texas-and any other actions the Panel deems necessary, in the District of Delaware. Global Crossing alternatively supports centralization of all actions in the Central District of California. One Texas co-defendant joins in this motion. Plaintiff RAKTL and eleven groups of affiliated Delaware or Texas defendants also oppose this second motion.

On the basis of the papers filed and hearing session held, the Panel finds that the actions in this litigation involve common questions of fact and that centralization in the Central District of California will serve the convenience of the parties and witnesses and promote the just and efficient conduct of the litigation. Each of the 25 MDL-1816 actions involves allegations of infringement and invalidity of one or more interactive call processing patents, sometimes referred to as the "Katz family of patents" (after the last name of the inventor of the patents). All actions can thus be expected to share factual and legal questions concerning such matters as the technology underlying the patents, prior art, claim construction and/or issues of infringement involving the patents. Centralization under Section 1407 is necessary in order to eliminate duplicative discovery, prevent inconsistent pretrial rulings, and conserve the resources of the parties, their counsel and the judiciary.

*2 Opponents argue that unique questions of fact relating to each defendant's allegedly infringing system will predominate over common factual questions among these actions. We are not persuaded by this argument. Transfer under Section 1407 does not require a complete identity or even a majority of common factual or legal issues as a prerequisite to transfer. Centralization will permit all actions to proceed before a single transferee judge who can structure pretrial proceedings to consider all parties' legitimate discovery needs, while ensuring that common parties and witnesses are not subjected to duplicative discovery demands. The transferee court will be able to formulate a pretrial program that allows any unique discovery in these actions to proceed concurrently on separate

tracks with discovery on common issues, *In re Joseph F. Smith Patent Litigation*, 407 F.Supp. 1403, 1404 (J.P.M.L.1976). The Panel is also aware that proceedings in some MDL-1816 actions are further advanced than other actions. It may well be that some actions may be ready for trial in advance of other MDL-1816 actions. If such is the case, nothing in the nature of this Section 1407 centralization will impede the transferee court, whenever it deems appropriate, from recommending Section 1407 remand. See Rule 7.6, R.P.J.P.M.L., 199 F.R.D. at 436-38; *In re Acacia Media Technologies Corp. Patent Litigation*, 360 F.Supp.2d 1337 (J.P.M.L.2005).

While any of the suggested districts would be an appropriate transferee district for this litigation, we are persuaded that this litigation should be centralized in the Central District of California before Judge Klausner, who has prior judicial experience with some of the patents involved in this docket and is thus already familiar with the technology underlying these patents.

IT IS THEREFORE ORDERED that, pursuant to 28 U.S.C. § 1407, the actions listed on Schedule A are transferred to the Central District of California and, with the consent of that court, assigned to the Honorable R. Gary Klausner for coordinated or consolidated pretrial proceedings.

SCHEDULE A

*MDL-1816-In re Katz Interactive Call Processing
Patent Litigation*

District of Delaware

*Ronald A. Katz Technology Licensing, LP v.
Reliant Energy Inc., et al., C.A. No. 1:06-543*

*Ronald A. Katz Technology Licensing, LP v. TD
Banknorth, Inc., et al., C.A. No. 1:06-544*

*Ronald A. Katz Technology Licensing, LP v. Ahold
USA, Inc., et al., C.A. No. 1:06-545*

--- F.Supp.2d ---

--- F.Supp.2d ---, 2007 WL 899462 (Jud.Pan.Mult.Lit.)
(Cite as: --- F.Supp.2d ---)

Ronald A. Katz Technology Licensing, LP v. Time Warner Cable, Inc., et al., C.A. No. 1:06-546

Ronald A. Katz Technology Licensing, LP v. American International Group, Inc., et al., C.A. No. 1:06-547

Eastern District of Texas

Ronald A. Katz Technology Licensing, LP v. American Airlines, Inc., et al., C.A. No. 2:06-334

Ronald A. Katz Technology Licensing, LP v. Aetna, Inc., et al., E.D. Texas, C.A. No. 2:06-335

Ronald A. Katz Technology Licensing, LP v. Citibank, N.A., et al., C.A. No. 5:05-142

*3 *Ronald A. Katz Technology Licensing, LP v. Discover Financial Services, Inc., et al.*, C.A. No. 5:06-182

Ronald A. Katz Technology Licensing, LP v. Genesys Conferencing, Inc., et al., C.A. No. 5:06-187

Ronald A. Katz Technology Licensing, LP v. American Electric Power Co., Inc., et al., C.A. No. 5:06-188

Ronald A. Katz Technology Licensing, LP v. Alltel Corp., et al., C.A. No. 9:06-177

Ronald A. Katz Technology Licensing, LP v. Chevron Corp., et al., C.A. No. 9:06-178

Ronald A. Katz Technology Licensing, LP v. Cox Communications, Inc., et al., C.A. No. 9:06-191

Ronald A. Katz Technology Licensing, LP v. DirecTV Group, Inc., et al., C.A. No. 9:06-192

Ronald A. Katz Technology Licensing, LP v. Earthlink, Inc., C.A. No. 9:06-193

Ronald A. Katz Technology Licensing, LP v. Tracfone Wireless, Inc., C.A. No. 9:06-194

Ronald A. Katz Technology Licensing, LP v. Ford Motor Co., et al., C.A. No. 9:06-195

Ronald A. Katz Technology Licensing, LP v. Cullen/Frost Bankers, Inc., et al., C.A. No. 9:06-196

Ronald A. Katz Technology Licensing, LP v. General Electric Capital Corp., et al., C.A. No. 9:06-197

Ronald A. Katz Technology Licensing, LP v. General Motors Corp., et al., C.A. No. 9:06-198

Ronald A. Katz Technology Licensing, LP v. Humana, Inc., C.A. No. 9:06-199

Ronald A. Katz Technology Licensing, LP v. Regions Financial Corp., et al., C.A. No. 9:06-201

Ronald A. Katz Technology Licensing, LP v. Safeco Insurance Co. of America, et al., C.A. No. 9:06-202

Ronald A. Katz Technology Licensing, LP v. U.S. Bancorp, et al., C.A. No. 9:06-203

Jud.Pan.Mult.Lit.,2007.
In re Katz Interactive Call Processing Patent Litigation
--- F.Supp.2d ---, 2007 WL 899462
(Jud.Pan.Mult.Lit.)

END OF DOCUMENT

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

v.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS; LLC; and
COMCAST OF PLANO, LP,

Defendants.

Civil Action No. 2:05-CV-443-TJW-CE

Jury Demand

ORDER GRANTING MOTION TO STAY

Defendants Comcast Corporation, Comcast Cable Communications LLC, and Comcast of Plano, LP (“Comcast”) have moved to stay all proceedings in this action pending resolution of a Motion to Transfer and Consolidate Rembrandt Technologies, LP Patent Litigation Pursuant to 28 U.S.C. § 1407, filed on March 9, 2007 and currently set for hearing on May 31, 2007 (the “MDL Motion”) and have requested expedited briefing and consideration. The Court being well and sufficiently advised in the premises, finds as follows:

The Court has the sole discretion to stay proceedings where it serves the interests of judicial economy and efficiency. *Rivers v. Walt Disney Co.*, 980 F. Supp. 1358, 1360 (C.D. Cal. 1997). The purpose of the Judicial Panel on Multidistrict Litigation is to promote judicial efficiency and to prevent inconsistent rulings. Judicial efficiency will be served by staying the present case – including the *Markman* hearing scheduled for April 27, 2007 – until the MDL Motion is resolved by the MDL Panel. Given the relatively short delay occasioned by such stay, no party will be unduly prejudiced.

Based on the foregoing, and the arguments made by counsel in their briefs, the Court finds that Comcast's Motion to Stay is well-taken and is **GRANTED**. Accordingly, **IT IS**

ORDERED that further proceedings in this case are **STAYED** pending the decision on consolidation and transfer by the MDL Panel.

IT IS SO ORDERED.

UNITED STATES DISTRICT COURT

EASTERN

DISTRICT OF

TEXAS

REMBRANDT TECHNOLOGIES, LP

NOTICE

V.

COMCAST CORPORATION, ET AL

CASE NUMBER: 2:05cv443(TJW)

TYPE OF CASE:

☒ CIVIL

☐ CRIMINAL

TAKE NOTICE that a proceeding in this case has been set for the place, date, and time set forth below:

PLACE

ROOM NO.

DATE AND TIME

TYPE OF PROCEEDING

CLAIM CONSTRUCTION HEARING

XX TAKE NOTICE that a proceeding in this case has been continued as indicated below:

PLACE

DATE AND TIME PREVIOUSLY
SCHEDULED

CONTINUED TO DATE
AND TIME

United States District Court
100 E. Houston St.
Marshall, TX 75670

April 27, 2007, 10:00 am

May 14, 2007, 9:00 am

David J. Maland

US MAGISTRATE JUDGE OR CLERK OF COURT

April 20, 2007

DATE

Deborah Latham

(BY) DEPUTY CLERK

TO: ALL COUNSEL OF RECORD

ATTENTION: STAFF OF JUDGE CHAD EVERINGHAM

ACKNOWLEDGMENT

NOTICE TO COUNSEL: Please sign in the space provided below and return to the court by facsimile, (903) 935-2295, within three (3) days of your receipt of the enclosed notice.

I acknowledge receipt of the indicated notice on the date shown below.

Case No. _____

Signature of Atty. _____ Date _____

Print Name of Atty. _____

Counsel for _____
(Name of Party)

Type of Proceeding: _____
(e.g., Scheduling Conference)

Date of Proceeding: _____

Time of Proceeding: _____

Location of Proceeding: _____

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

V.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS; LLC; and
COMCAST OF PLANO, LP,

Defendants.

Civil Action No. 2:05-CV-443-TJW-CE

Jury demand

**COMCAST’S MOTION TO STAY PENDING RESOLUTION OF MOTION TO
CONSOLIDATE BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT
LITIGATION AND MOTION FOR EXPEDITED CONSIDERATION**

Defendants Comcast Corporation, Comcast Cable Communications LLC, and Comcast of Plano, LP (collectively “Comcast”) move this Court to stay all proceedings in this action pending resolution of a Motion to Transfer and Consolidate Rembrandt Technologies, LP Patent Litigation Pursuant to 28 U.S.C. § 1407 (“MDL Motion”), filed on March 9, 2007 and currently set for hearing on May 31, 2007 before the Judicial Panel on Multidistrict Litigation (“MDL Panel”). Judicial economy and efficiency will be promoted by staying proceedings in the present case – including the claim construction hearing recently scheduled for April 27, 2007¹ – until the MDL Panel determines whether a single judge should preside over pretrial proceedings of the fourteen related, Rembrandt patent cases.

Comcast further moves the Court for expedited briefing and consideration of this motion to stay, based on the currently scheduled *Markman* hearing, as the normal briefing schedule does not allow the Court to decide Comcast's present motion to stay pending resolution of the MDL

¹ Comcast recently requested that the claim construction hearing be moved from the April 27, 2007, date to accommodate counsel's schedule. This motion to stay requests the separate relief of a stay of all proceedings pending decision by the MDL.

Motion before the *Markman* hearing date.

**BRIEF IN SUPPORT OF MOTION TO STAY AND FOR EXPEDITED
CONSIDERATION**

I. INTRODUCTION

Comcast respectfully requests that the Court temporarily stay this case pending resolution of the MDL Motion, which another cable-company defendant in a parallel Rembrandt case filed over a month ago on March 9, 2007. The MDL Panel will hear the MDL Motion six weeks from now, on May 31, 2007. Proceeding with the present action, and in particular the *Markman* hearing, despite the pendency of the MDL Motion will cause the parties and the Court to expend substantial resources – in an effort that may well be rendered moot depending on the MDL Panel’s decision. Moreover, temporarily staying this action until the MDL Panel’s decision will also minimize any risk of inconsistent rulings on important pretrial issues, particularly claim construction, that may apply to all the parallel Rembrandt cases. Should the MDL Panel transfer this case, this Court will be divested of all jurisdiction of this matter for pretrial purposes, and a single judge will be assigned to determine these issues in all of the Rembrandt cases pending nationwide. A temporary stay pending the MDL Panel’s decision will alleviate the potential for wasting judicial and party resources and for unnecessary procedural complexity.

Further, a temporary stay will not prejudice anyone. The originally scheduled date for the *Markman* hearing in this action was vacated upon the disqualification of Rembrandt’s former lead counsel, and no further case dates other than the *Markman* hearing have been rescheduled. Without a current schedule, a temporary stay pending the MDL Panel’s determination on whether to grant the MDL Motion will not adversely affect Rembrandt.

Staying this case pending resolution of the MDL Motion will promote judicial efficiency, benefit the parties, and ensure a fair and economical pretrial process – regardless of the outcome of the MDL Motion – without detriment. Thus the Court should grant Comcast’s motion.

II. RELEVANT BACKGROUND

The present action filed by Rembrandt against the Comcast defendants is one of fourteen parallel actions involving patent claims asserted by Rembrandt against the major cable

companies in the United States, as well as other television-network and electronics-manufacturing defendants.² In the present case, a *Markman* hearing had been scheduled for February 8, 2007. The Court disqualified Rembrandt's then-lead counsel based on conflicts of interest, and (per party stipulation) suspended all deadlines pending appointment of new counsel. *See Orders (Comcast Dkt. nos. 140, 142, 144, 145).*

On March 9, 2007, CoxCom moved the MDL Panel for an order consolidating and transferring the fourteen related Rembrandt patent actions. *See CoxCom Motion to Transfer And Consolidation of Rembrandt Technologies, LP Patent Litigation Pursuant to 28 U.S.C. §1407, MDL Docket No. 1848, filed March 9, 2007 (Comcast, Dkt. no. 153) at 2.* Including the present action, Rembrandt has asserted patent claims against twenty-nine parties, in fourteen related actions, in three judicial districts – the Eastern District of Texas, the District of Delaware, and the Southern District of New York. *Id.* Nine of those actions involve some or all of the four patents asserted against Comcast in this case. *See id.* at Exh. B. The remaining five patents are asserted against Comcast in related Civil Action No. 2:06-cv-506-TJW and against other parties in four related actions. *Id.* There have been no substantive orders issued in any of these actions, and no claim construction hearings have been held. *Id.* at 4.

On April 12, 2007, the MDL Panel set CoxCom's MDL Motion for hearing on May 31, 2007 at 9:30 a.m. *See Exh. A (Notice of Hearing Session) at 1.* Five days later, this Court scheduled a *Markman* hearing for April 27, 2007, before Magistrate Judge Chad Everingham. *See Notice dated April 17, 2007 (Comcast Dkt. no. 159).* Also currently pending before this Court are motions by other cable-company defendants in the parallel Eastern District of Texas Rembrandt cases to consolidate the present case with those matters for pretrial purposes.³

² In the interests of brevity, Comcast will not recount the history of each of the various Rembrandt lawsuits. The jurisdictions and parties to these actions are identified and described on pages 4-9 and in Exhibits A-B to CoxCom's Motion to Transfer and Consolidate. *See Comcast Dkt. no. 153.*

³ Charter Communications, CoxCom, Time Warner Cable, and related entities – each a defendant in cases filed by Rembrandt in the Eastern District of Texas alleging infringement of the same patents asserted against Comcast – moved the Court to consolidate all Rembrandt cases for pretrial purposes. Comcast agrees that such consolidation is appropriate and would save party and judicial resources and accordingly did not object to these consolidation motions. *See Comcast Dkt. no. 158.*

III. ARGUMENT

The Court has the sole discretion to stay proceedings where it serves the interests of judicial economy and efficiency. *See Rivers v. Walt Disney Co.*, 980 F. Supp. 1358, 1360 (C.D. Cal. 1997); *see also Alza Corp. v. Wyeth*, 2006 WL 3500015 *2 (E.D. Tex. Nov. 21, 2006). In exercising that discretion to stay an action, courts often consider: (1) judicial resources that will be saved by avoiding duplicative litigation if cases are in fact coordinated; (2) hardship and inequity to the moving party if the action is not stayed; and (3) potential prejudice to the non-moving party. *See Rivers*, 980 F. Supp. at 1360; *Alza Corp.*, 2006 WL 3500015 at *2. With the MDL Motion pending – in addition to a motion to consolidate before this Court – efficiency and economy dictate staying the present action.

A. A Temporary Stay Will Promote the Fair and Efficient Adjudication of this Action

Substantial judicial and party resources may be wasted if substantive proceedings, such as a *Markman* hearing, proceed in this case while the MDL motion is pending. If granted, the MDL Motion will divest this Court of all pretrial jurisdiction in this matter, including construction of the claims of the asserted patents. *See* 28. U.S.C. § 1407; *Astarte Shipping Co. v. Allied Steel & Export Serv.*, 767 F.2d 86, 87 (5th Cir. 1985). As the Fifth Circuit has stated:

A transfer under section 1407 transfers the action lock, stock, and barrel. The transferee district court has the power and the obligation to modify or rescind any orders in effect in the transferred case which it concludes are incorrect. In addition, when the [Judicial Panel on Multidistrict Litigation] orders a case transferred, the transferor district court is deprived of jurisdiction until the case is returned to it.

Id. Such complete transfer promotes the purpose of multidistrict litigation – to coordinate the pretrial management of actions sharing common facts and issues of law in a just and efficient manner. *See* 28 U.S.C. § 1407(a). Actions involving overlapping patents are particularly well-suited for consolidation to promote efficiency and avoid duplicative or potentially inconsistent pretrial rulings, given the shared questions concerning the technology underlying the patents, the validity of the patents, claim construction and issues of infringement. *See* 28 U.S.C. § 1407; *In re Acacia Media Techs. Corp Patent Litig.*, 360 F. Supp. 2d 1377, 1379 (J.P.M.L. 2005); *In re MLR, LLC, Patent Litig.*, 269 F. Supp. 2d 1380, 1381 (J.P.M.L. 2003).

Because of the efficiency and consistency reasons underlying coordinated multidistrict litigation, courts have routinely stayed actions where motions to transfer are pending before the MDL Panel. *See, e.g., Hertz Corp. v. Gator Corp.*, 250 F. Supp. 2d 421, 428 (D.N.J. 2003), *Rivers*, 980 F. Supp. at 1360; *see also Miranda v. Ocwen Financial Corp.*, 2007 U.S. Dist. LEXIS 23389 (W.D. Tex., March 30, 2007) at *3; *Anderson v. Merck & Co.*, 2007 U.S. Dist. LEXIS 1261 (S.D. Tex., January 5, 2007) at *3; *Texas Ex Rel Ven-A-Are v. Abbott Labs., Inc.*, 2005 U.S. Dist. LEXIS 42434 (W.D. Tex., December 5, 2005) at *3-6; *Network-1 Security Solutions, Inc. v. D-Link Corporation*, Civil Action No. 6:05-CV-291 (E.D. Tex. Nov. 3, 2005) (“It would be an inefficient use of judicial resources to take action in this case before the Judicial Panel on Multidistrict Litigation decides the transfer issue.”) (attached as Exhibit C); *Blackshire v. Pfizer, Inc.*, Civil Action No. 1:05-CV-383 (E.D. Tex. Aug. 8, 2005) (attached as Exhibit D); *Falgoust v. Microsoft*, 2000 U.S. Dist. LEXIS 5417 (E.D. La., April 20, 2000) at *2-8. Without a stay, the Court loses the potential efficiencies that would be created by having pretrial issues involving common facts and law decided by a single judge. *See* 28 U.S.C. § 1407.

Indeed, in parallel cases concerning *these very patents* and subject to the same MDL Motion, the District Court for the District of Delaware *sua sponte* issued an order staying all proceedings in its own Rembrandt cases pending the outcome of the MDL Motion. *See* Exh. B (*Rembrandt* Actions, Order Staying Civil Actions, filed March 26, 2007). In that order, the Honorable Gregory Sleet noted that “it is in the interests of justice and judicial economy to stay the above-captioned cases until the Motion is resolved.” *Id.* The same statement applies with equal force here.

Staying this case pending resolution of the MDL Motion will ensure that the resources of the Court and of the parties are not expended unnecessarily. Should the MDL Panel grant the MDL Motion, the fourteen cases will be transferred to one court for pretrial purposes so that the substantial common questions of law and fact – such as claim construction for the asserted patents– that predominate these actions can be addressed in a coordinated manner. Each affected party will be afforded the proper opportunity to participate in that process.

By contrast, proceeding with the *Markman* hearing prior to resolution of the MDL

Motion increases the risk of wasting judicial resources and compromising justice. First, should the MDL Panel grant the MDL Motion, the parties and the Court may be forced to perform duplicative work and thereby unnecessarily expend substantial resources. A relevant and instructive example is the MDL Panel's recent decision to consolidate and transfer the "Katz" patent litigations after the Honorable David Folsom had already conducted a *Markman* hearing in *Katz v. Citibank et al.* (E.D. Tex. Case No. 5:05-cv-00142-DF). *See In re Katz Interactive Call Processing Patent Litigation*, 2007 WL 899462 (J.P.M.L. March 20, 2007) (attached as Exhibit E). Indeed, the MDL Panel in that instance transferred the Katz cases even though the petitioners for MDL consolidation filed their MDL motion, *a month after* Judge Folsom had already held his *Markman* hearing. In the present case, a temporary stay pending the MDL's panel's decision will ensure that the substantial effort and resources put into the *Markman* hearing will not be for naught.

Second, construction of the claim terms in the present dispute may or may not bind either the other parties or the court in the consolidated action. As discussed above, the transferee court presiding over an MDL matter has the authority to revisit any prior pretrial orders. *See Astarte Shipping*, 767 F.2d at 87; *see also Pinney v. Nokia, Inc.*, 402 F.3d 430, 452-453 (4th Cir. 2005) (transferee court for MDL litigation could decide motion to dismiss on preemption grounds even though, in one transferred case, transferor court had already denied motions to dismiss); *In re Multi-Piece Rim Products Liability Litigation*, 653 F.2d 671, 676 (D.C. Cir. 1981) ("[The transferee] judge has the power to set aside pretrial rulings of transferor courts, and courts performing auxiliary roles must be guided by the transferee judge's rulings."); *Degulis v. LXR Biotech, Inc.*, 928 F. Supp. 1301, 1309 (S.D.N.Y. 1996) ("A transferee court ... has the power to modify interlocutory orders entered by the transferor court prior to transfer under 28 U.S.C. § 1407.") (citation omitted).

Further, should the MDL Motion be granted, it will likely occur before a *Markman* Order in this action is finalized. Conducting a *Markman* hearing and construing the terms at issue here will require substantial investments of time and resources. For the four patents at issue in this case, the parties seek construction of some twenty-six disputed claim terms. *See Second*

Amended Joint Claim Construction and Prehearing Statement dated Jan 22, 2007 (*Comcast* Dkt. no. 136). Not including exhibits and other supporting materials, the *Markman* briefs alone total almost 100 pages. And once the Court issues its Order construing those claims, the parties by right have the opportunity to appeal that Order to the District Court within ten days. *See* 28 U.S.C. § 636(b)(1)(A); E.D. Tex. Local Rules Appendix B, Rule 4(A). Therefore, should the MDL Motion be granted, the Court may lose jurisdiction over this matter before any claim construction ruling can be entered by the District Court.

Moreover, currently pending before this Court is the motion by Coxcom, Charter, and Time Warner to consolidate the present case with the parallel Rembrandt cases in the Eastern District of Texas for pretrial purposes. The reasons articulated in the briefing in support of consolidation also support vacating and temporarily staying the scheduled *Markman* hearing here. If the MDL Panel declines to transfer the actions, the Court still must decide whether, in the interest of efficiency and conservation of judicial resources, it should consolidate the actions pending against Comcast, Time Warner, Charter, and CoxCom. Therefore, staying the current *Markman* hearing pending the outcome of the MDL Motion and consolidation motion is warranted, because as the Court recognized in its Order disqualifying Rembrandt's counsel, "there is a likelihood" that the claim construction proceedings in the Comcast action "could, as a practical matter, prejudice Time Warner in subsequent proceedings." *See* Memorandum Opinion and Order, filed February 8, 2007 (*Comcast* Dkt. no. 144).

B. Rembrandt Will Suffer No Significant Prejudice From A Stay

Rembrandt will not be prejudiced by a stay, regardless of the decision by the MDL Panel. Even if the MDL Panel declines to consolidate and transfer all of the pending Rembrandt actions, Rembrandt will have experienced no significant delay. Other than the *Markman* hearing, there are currently no other dates scheduled in this action. Rembrandt cannot argue that a minor delay in scheduling pending a ruling from the MDL Panel outweighs the substantial interests of both the Court and the parties in preserving resources and having issues conclusively and comprehensively determined.

Moreover, any impact related to the duplicity of the parallel Rembrandt cases on identical

patents, based on identical theories and spread around the country, has been of Rembrandt's own making. Rembrandt chose to file separate lawsuits in different jurisdictions on the same patents. Comcast asks only that the MDL Panel, and this Court, be given the chance to address the issues raised by these separate actions in a single and unified manner, and to refrain from taking actions that would unnecessarily complicate or result in duplicative or wasted resources. The complexities caused by Rembrandt's litigation strategy should not preclude temporarily staying this action pending the MDL Panel's decision.

C. Expedited Consideration Is Required

Due to the currently scheduled *Markman* hearing for April 27, 2007, Comcast's motion to stay should be heard on an expedited basis. The *Markman* hearing is the only presently scheduled deadline for this case, and is the basis for this motion to stay. Conducting the *Markman* hearing prior to the MDL Panel's decision on the MDL Motion could lead to significant adverse consequences against the parties and against judicial efficiency, as discussed above.

Further, the standard schedule does not afford the opportunity for Comcast's motion to stay to be heard timely and in a manner to avoid the adverse consequences discussed in this motion. Because of the potential impact of the MDL Motion, and the serious consequences of holding a *Markman* hearing prior to MDL Panel's decision, Comcast submits that this motion should be heard as soon as possible.

IV. CONCLUSION

Temporarily staying this action pending resolution of the Motion to Transfer and Consolidate currently pending before the MDL Panel will promote judicial efficiency. For the foregoing reasons, Comcast hereby requests that the Court grant its motion and stay further proceedings until such time as the MDL Panel has issued its ruling on the pending MDL Motion.

Respectfully submitted,

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CABLE COMMUNICATIONS, LLC,
COMCAST OF PLANO**

CERTIFICATE OF CONFERENCE

Counsel for Comcast has conferred with Plaintiff's counsel in good faith, and Plaintiff is opposed to this motion.

/s/Jennifer Haltom Doan

Jennifer Haltom Doan

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). All other counsel of record not deemed to have consented to electronic service with a true and correct copy of the foregoing by certified mail, return receipt requested, on this 19th day of April, 2007.

/s/Jennifer Haltom Doan

Jennifer Haltom Doan

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP

v.

COMCAST CORPORATION;
COMCAST CABLE
COMMUNICATIONS, LLC; AND
COMCAST OF PLANO, LP

Civil Action No. 2:05-cv-00443-TJW

Jury Trial Demanded

NOTICE OF APPEARANCE

Notice is hereby given that attorney Andrew T. Gorham enters his appearance in this matter as additional counsel for Plaintiff for the purpose of receiving notices from the Court.

Dated April 23, 2007

Respectfully submitted,

/s/ Andrew T. Gorham

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CERTIFICATE OF SERVICE

I hereby certify that the following counsel of record, who are deemed to have consented to electronic service are being served this 23rd day of April, 2007, with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3). Any other counsel of record will be served by electronic mail, facsimile transmission and/or first class mail on this same date.

/s/ Andrew T. Gorham
ANDREW T. GORHAM

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECH., LP,

vs.

COMCAST CORP. ET AL.

§
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CASE NO. 2:05-CV-443

ORDER

The court hereby expedites the plaintiff's response to the defendants' Motion to Stay (#162-

1). The plaintiff is requested to file its responsive briefing on or before April 27, 2007.

SIGNED this 23rd day of April, 2007.


CHARLES EVERINGHAM IV
UNITED STATES MAGISTRATE JUDGE

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

vs.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS, LLC; and
COMCAST OF PLANO, LP,

Defendant.

Case No. 2:05-CV-443-TJW-CE

Jury demand

**PLAINTIFF'S RESPONSE IN OPPOSITION
TO DEFENDANTS' MOTION TO STAY**

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I. INTRODUCTION

Plaintiff Rembrandt Technologies, LP (“Rembrandt”) opposes the motion of Defendants Comcast Corporation, Comcast Cable Communications LLC, and Comcast of Plano, LP (collectively “Comcast”) to stay this case pending resolution of a motion to consolidate proceedings before the Multidistrict Litigation (“MDL”) Panel. [Dkt. No. 162].

Comcast’s motion to stay is the most recent effort by one or more of the Defendants either to postpone or avoid altogether the *Markman* hearing originally set for February 8, 2007. On March 2, 2006, the Defendants in *Rembrandt Technologies, LP v. Charter Communications, Inc., et al.*, Case No. 2:06-CV-223 (“Charter I”) [Dkt. No. 63] and in *Rembrandt Technologies, LP v. Time Warner Cable, Inc., et al.*, Case No. 2:06-CV-224 (“Time Warner I”) [Dkt. No. 39] moved to consolidate their cases with this case for pretrial purposes and asked the Court to delay the *Markman* hearing for an unspecified period of time to allow them to participate.¹ Seven days later, on March 9, 2007, CoxCom, Inc., one of the defendants in Charter I, asked the MDL Panel to transfer and consolidate all cases filed by Rembrandt, including the cases before this Court, to the District of Delaware for pretrial proceedings.² Now, after the Court reset the *Markman* hearing from February 8 to April 27, and then again to May 14, Comcast asks the Court to stay the case and postpone the *Markman* hearing once again to await the outcome of the pending MDL motion.

Rembrandt, respectfully, urges the Court to deny Comcast’s motion. One, the MDL rules do not require the Court to stay its proceedings while a motion to transfer and consolidate is pending. Two, and as important, another delay of the *Markman* hearing is not warranted. If not

¹ The Court recently set the *Markman* hearing in Charter I and Time Warner I for February 2008. [Charter I, Dkt. No. 80; Time Warner I, Dkt. No. 69]

² Earlier, in December 2006, CoxCom moved to dismiss Charter I, as against it, on personal jurisdiction grounds. [Dkt. No. 52].

for the disqualification of Rembrandt's former counsel, the *Markman* hearing that Comcast now seeks to postpone again would have been held almost three months ago. When the Court disqualified Rembrandt's counsel, it indicated that it did not intend for that ruling to be the cause of any "undue delay" in prosecuting this case. [Dkt. No. 144 at 7]. Notwithstanding the Court's intent, the Defendants appear focused on turning the delay necessitated by that ruling, which with much effort and additional expense has been kept quite short, into the substantial delay the Court was confident could be avoided. That substantial delay, and its attendant prejudice to Rembrandt, still can and should be avoided. The Court should deny this motion and proceed with the *Markman* hearing on May 14 as scheduled. [Dkt. No. 163].

II. ARGUMENT

A. The JPML Rules Do Not Favor a Stay in These Circumstances.

Comcast asks the Court to suspend proceedings in this case due to the pendency of an MDL motion to transfer and consolidate filed—seven weeks ago—by CoxCom, one of the defendants in Charter I. [Dkt. No. 153]. In determining whether a stay of litigation in such circumstances is necessary or appropriate, it is logical to begin with the rules governing MDL procedures. Though Comcast fails to cite those rules in its brief, the rules address this very circumstance. In particular, Rule 1.5 of the Rules of Procedure of the Judicial Panel on Multidistrict Litigation ("JPML") provides that:

The pendency of a motion, order to show cause, conditional transfer order or conditional remand order before the Panel concerning transfer or remand of an action pursuant to 28 U.S.C. §1407 does not affect or suspend orders and pretrial proceedings in the district court in which the action is pending and does not in any way limit the pretrial jurisdiction of that court.

Pursuant to this rule, "a district judge should not automatically stay discovery, postpone rulings on pending motions, or generally suspend further rulings upon a parties' motion to the MDL Panel for transfer and consolidation." *Rivers v. The Walt Disney Co.*, 980 F. Supp. 1358, 1360 (C.D. Cal. 1997); *see also Hertz Corp. v. Gator Corp.*, 250 F. Supp. 2d 421, 424 (D.N.J. 2003) ("In general, the Court need not defer consideration of pretrial motions or stay pretrial

proceedings pending decision of a motion before the MDL Panel.”); *In re Duke Energy Corp.*, No. 02-CV-3960-JSR, 2002 U.S. Dist. LEXIS 15406, at *3 (S.D.N.Y. Aug. 20, 2002) (“the filing of a motion before the MDL Panel does not require this Court to defer its consideration of the motions [before it] or in any other way defer the progress of this case.”).

In fact, contrary to Comcast’s implication that stays are favored in these circumstances, JPML Rule 1.5 reflects a general intent to *discourage* courts from granting stays pending the resolution of MDL motions. *See, e.g., Sao Paulo v. The American Tobacco Co., Inc.*, No. 98-CV-3279, 2000 U.S. Dist. LEXIS 9617, at *4-*5 (E.D. La. May 26, 2000) (“conclusively” rejecting the proposition that “a stay pending a decision by the MDL Panel is somehow favored,” and describing an MDL Panel Chairman “lament[ing] the fact that transferor judges often choose (either formally or informally) not to exercise their continued jurisdiction”).

The rule has particular significance in this situation, where Comcast is attempting to use the pending MDL motion as little more than a device to secure yet another delay in this case. For “[i]t was precisely to obviate such [delaying] tactics that Rule 1.5 was promulgated.” *In re Duke Energy Corp.*, 2002 U.S. Dist. LEXIS 15406, at *4; *see also, e.g., Freeman v. Minnesota Mining and Mfg. Co.*, 661 F. Supp. 886, 888 (D. Del. 1987) (holding that stays requested for dilatory purposes should not be granted).

B. The Procedurally Advanced Posture of This Case Weighs Heavily Against a Stay.

Because the JPML rules do not contemplate a stay in these circumstances, Comcast’s request must be judged by “the principles articulated in the precedents governing issuance of stays.” *Hertz Corp.*, 250 F. Supp. 2d at 424. A litigation’s advanced procedural stage is a critical factor in determining whether a stay of proceedings is appropriate. *See Agar Corp., Inc. v. Multi-Fluid, Inc.*, 983 F. Supp. 1126, 1128 (S.D. Tex. 1997) (“[T]he earlier the motion is filed, the more the court will be inclined to suspend its proceedings However, courts are inclined to deny a stay when the litigation is at a later stage.”). It thus comes as little surprise that, of the external cases involving MDL-related stays cited by Comcast, not one was granted more than

three months after the original complaint was filed. The fact that this case has been pending for eighteen months, has been the subject of extensive discovery—and is now, finally, at the doorstep of the *Markman* hearing—thus weighs heavily against granting Comcast’s motion.

1. The Stage of Litigation is a Critical Factor in the Stay Analysis, and Counsels Denying the Requested Stay.

In patent-related cases, the stage of litigation frequently determines whether or not a stay will be granted. *See, e.g., GPAC, Inc. v. D.W.W. Enterprises, Inc.*, 144 F.R.D. 60, 64 (D.N.J. 1992) (“[m]ost often, cases have been denied a stay due to the late stage of litigation”). In this district, a case that is well underway and proceeding steadily toward trial should not be stayed “unless extraordinary circumstances arise.” *Soverain Software LLC v. Amazon.com, Inc.*, 356 F. Supp. 2d 660, 663 (E.D. Tex. 2005); *see id.* (denying a stay where the case had been pending for one year); *see also Agar Corp.*, 983 F. Supp. at 1128 (denying a stay where the case had “been pending for approximately one year and nine months”).

This case is at the *Markman* stage, and Comcast has alleged no “extraordinary circumstances” that would warrant a delay. *See Soverain Software*, 356 F. Supp. 2d at 663. In these circumstances, “[d]erailing these proceedings when a resolution is in sight would be ill-advised at best.” *NTP, Inc. v. Research In Motion, Ltd.*, 397 F. Supp. 2d 785, 788 (E.D. Va. 2005); *see also Enprotech Corp. v. Autotech Corp.*, No. 88-CV-4853, 1990 U.S. Dist. LEXIS 2926, at *3 (N.D. Ill. Mar. 15, 1990) (“We are too far along the road to justify halting the journey while the defendant explores an alternate route. The motion to stay is denied.”).³

³ The relative stages of the various actions is also an important consideration in the MDL context, and may well prove to be a ground on which the Panel denies the current motion to consolidate. *See, e.g., In re Solaia Tech. LLC Patent & Antitrust Litig.*, 346 F. Supp. 2d 1373 (J.P.M.L. 2004) (denying motion to consolidate and transfer where “some constituent actions have already been pending for over two years”); *In re Motion Picture Licensing Antitrust Litig.*, 479 F. Supp. 581, 590 (J.P.M.L. 1979) (“We have concluded that some or all claims raised in many of the actions now before us are also inappropriate for transfer, [in part] because discovery and other pretrial proceedings are well advanced in those actions.”); *In re Bourns Patent Litig.*, 385 F. Supp. 1260, 1261 (J.P.M.L. 1974) (The Panel has “consistently denied transfer of actions in patent litigation where one of the actions was proceeding expeditiously toward trial on the common issue of validity.”).

2. All of the MDL-Related Cases Cited By Comcast Were in Their Earliest Stages When Stayed.

Comcast cites seven cases in support of its assertion that “courts have routinely stayed actions where motions to transfer are pending before the MDL Panel.” [Motion at 5]. A cursory review of these cases demonstrates that they *all* were in their very earliest stages when stayed—pending only between four and twelve weeks. *See Hertz Corp. v. Gator Corp.*, 250 F. Supp. 2d 421, 423 (D.N.J. 2003) (staying action that had been pending for six weeks); *Miranda v. Ocwen Financial Corp.*, No. 07-CV-0034-FB, 2007 U.S. Dist. LEXIS 23389, at *2 (W.D. Tex. Mar. 30, 2007) (staying action that had been pending for eleven weeks); *Falgoust v. Microsoft Corp.*, No. 00-CV-0779, 2000 U.S. Dist. LEXIS 5417 (E.D. La. April 20, 2000) (staying action that had been pending for four weeks); *Anderson v. Merck & Co.*, No. 06-CV-114, 2007 U.S. Dist. LEXIS 1261, at *1 (S.D. Tex., Jan. 5, 2007) (staying action that had been pending in federal court for eight weeks); *Texas Ex Rel. Ven-A-Care v. Abbott Labs., Inc.*, No. 05-CV-897-LY, 2005 U.S. Dist. LEXIS 42434 (W.D. Tex. Dec. 5, 2005) (staying action that had been pending in federal court for six weeks); *Network-1 Security Solutions, Inc. v. D-Link Corp.*, No. 6:05-CV-291-LED (E.D. Tex. Nov. 3, 2005) [Dkt. No. 33] (staying action that had been pending for twelve weeks); *Blackshire v. Pfizer, Inc.*, No. 1:05-CV-383-MAC (E.D. Tex. Aug. 19, 2005) [Dkt. No. 9] (staying action that had been pending for eleven weeks). In contrast, this case was filed approximately nineteen months ago.

Comcast also points out that the Delaware district court “*sua sponte* issued an order staying all proceedings in its own Rembrandt cases pending the outcome of the MDL motion.” [Motion at 5]. But of course the cases in Delaware, like the ones cited above, were all in their very earliest stages. In fact, no scheduling conference had been held in any of those cases prior to the court’s decision to stay them last month. [See Exh. B to Motion].

The result in all of the cases cited by Comcast is thus easily explained by the principle that “the earlier the motion [to stay] is filed, the more the court will be inclined to suspend its

proceedings.” *Agar Corp.*, 983 F. Supp. at 1128. In stark contrast to the cases cited by Comcast, this case is well underway, ready for a *Markman* hearing, and likely will be resolved this year. The Court should thus be disinclined to suspend proceedings absent a clear showing—and none has been made here—that “extraordinary circumstances” necessitate a delay. *Soverain Software*, 356 F. Supp. 2d at 663.

C. The *Rivers* Three-Factor Test Counsels Denying the Requested Stay.

Comcast suggests that, in deciding whether to stay this case, the Court should apply the three-factor test endorsed in *Rivers v. The Walt Disney Co.*, 980 F. Supp. 1358, 1360 (C.D. Cal. 1997):

When considering a motion to stay, the district court should consider three factors: (1) potential prejudice to the non-moving party; (2) hardship and inequity to the moving party if the action is not stayed; and (3) the judicial resources that would be saved by avoiding duplicative litigation if the cases are in fact consolidated.

[See Motion at 4]. Applying this three-factor test to the circumstances in this case leads unmistakably to the conclusion that Comcast’s motion should be denied.

1. Rembrandt Would Be Prejudiced By Yet Another Delay in the *Markman* Hearing.

If not for the disqualification of Rembrandt’s former counsel, the *Markman* hearing Comcast is seeking to put off would have been held on February 8. [See Dkt. Nos. 52, 140, 144]. In deciding that disqualification was necessary, the Court recognized that the attendant costs and delay would cause some “prejudice to Rembrandt.” [Dkt. No. 144 at 7]. Nevertheless, the Court concluded that, “[o]n balance, [it was] confident that Rembrandt will be able to secure other counsel to prosecute this case without undue delay.” [Dkt. No. 144 at 7]. Rembrandt has secured new lead counsel, and is prepared to proceed with the *Markman* hearing and expeditiously toward the resolution of this litigation. [Dkt. No. 151].

The once-delayed (by disqualification of counsel) *Markman* hearing would have been held today—if not for a scheduling conflict on the part of Comcast’s counsel. [See Dkt. No.

159]. Comcast now seeks another postponement. Almost three months after the *Markman* hearing's originally scheduled date, and more than one month after the MDL motion was filed—and while Rembrandt's new counsel is in the midst of intensive preparation for the scheduled May 14 *Markman* hearing—Comcast now asks the Court to suspend all proceedings in this case. [Motion at 2].

Rembrandt has suffered harm due to the disqualification of its former counsel in this case: it has borne the costs of getting new lead counsel up to speed on the *Markman* issues in a compressed timeframe, and its original trial date will likely slip to later in the year. *See, e.g., Soverain Software*, 356 F. Supp. 2d at 663 (“[i]n all cases before it, the Court places great importance on going to trial on the date set in the scheduling order”); *Castanho v. Jackson Marine, Inc.*, 484 F. Supp. 201, 209 (E.D. Tex. 1980) (“each party to a lawsuit has a right to an expe[ditious] determination of his claim”). Granting Comcast's motion will only exacerbate this prejudice to Rembrandt, and could easily cause the hearing on these fully-briefed *Markman* issues to be pushed well past this case's originally scheduled August 6, 2007 trial date. [See Dkt. No. 52]. To ensure that “Rembrandt will be able to . . . prosecute this case without undue delay,” [Dkt. No. 144 at 7], the Court should deny the requested stay.

2. **There is Neither Hardship Nor Inequity to Comcast in Proceeding As Scheduled With the *Markman* Hearing.**

In one of the Supreme Court's few pronouncements on the issue, it held that the “suppliant for a stay must make out a clear case of hardship or inequity in being required to go forward, if there is even a fair possibility that the stay for which he prays will work damage to someone else.” *Landis v. North American Co.*, 299 U.S. 248, 255 (1936); *see also Castanho*, 484 F. Supp. at 209 (quoting *Landis*, and adding that “[t]he burden is squarely on the party seeking the stay to show that there is a pressing need for a delay”). Because there is a significant risk that granting the requested stay will substantially derail the well-advanced schedule in this case, Comcast “must make out a clear case of hardship or inequity in being required to go

forward” with the *Markman* hearing on May 14.

Comcast proposes a few efficiency-related arguments for staying the case—each addressed below—but comes nowhere close to a clear showing that it would be inequitable to require Comcast to present arguments on the briefs it filed months ago. [See Motion at 5-7]. The “hardship” or “inequity” appears to consist of the prospect that Comcast will be subject to a claim construction ruling of this Court. Comcast has been aware that it would be subject to a *Markman* ruling from this Court from the day suit was filed in September of 2005. And it fully briefed the *Markman* issues under the assumption that this Court would be deciding them. There is neither hardship nor inequity to Comcast in proceeding with the hearing as scheduled on May 14.

3. A Stay Will Not Conserve the Resources That Have Been and Are Currently Being Expended.

Almost all of Comcast’s arguments relate to conserving judicial resources; those arguments are addressed seriatim below. But the bottom line is this: from the perspective of resource conservation, the most rational result is for this Court to retain jurisdiction over this case, and to proceed with its timely resolution. Of the cases subject to the MDL motion, this case is by the far most procedurally advanced—the next most procedurally advanced cases, also in this Court, have only recently been issued scheduling orders. Additionally, this Court has expended more time and resources on the issues raised in these cases than any other Court, and thus has the most familiarity with those issues.

There is no reason to think that further delaying the *Markman* hearing in this case will result in resource conservation. Much of the work has already been done. As Comcast notes, the *Markman* briefs—completed and filed months ago—are extensive, “total[ing] almost 100 pages.” [Motion at 7]. And more work is currently underway—Rembrandt’s counsel, and presumably Comcast’s as well, are in the midst of preparing for the hearing that was first reset for today, and has now been reset for May 14. It would not be efficient for the parties to engage

in yet another round of preparation for this hearing some unknown number of months from now.

D. Comcast's Efficiency-Related Arguments For Delaying the *Markman* Hearing Are Misguided.

Comcast offers four arguments in support of its claim that staying this litigation will promote its “efficient adjudication.” [Motion at 4-7]. None is persuasive.

1. The Best Way to Ensure That There Will Be No Duplication of Work is to Complete the *Markman* Process Now.

Comcast first argues that, “should the MDL Panel grant the MDL motion, the parties and the Court may be forced to perform duplicative work.” [Motion at 6]. This argument fails to account for the fact that the parties and the Court have already performed a great deal of work in this case—work that has not been performed in any of the other cases subject to the MDL motion. To the extent that the “avoid-duplication” argument has purchase, therefore, it counsels denying that MDL motion—not staying this case.

As a matter of fact, the best way to ensure that there will be no need for any duplication of the *Markman*-related work in which the parties and the Court have already engaged in this case is to complete the claim-construction process now. Should the Court hold the *Markman* hearing on May 14, as scheduled, and issues its ruling, then there would be no waste of resources, even if the MDL Panel ultimately determines that a transfer under 28 U.S.C. §1407 is necessary. For as described in the section below, in that event the Court’s ruling would be—at a minimum—the “law of the case,” and would not be subject to revision by the transferee court absent compelling circumstances.

2. There is No Realistic Threat That a Prospective Transferee Court Would Overturn This Court’s Claim Construction Ruling.

Comcast suggests that the Court should delay deciding the *Markman* issues because, if the case were to be transferred, the transferee court would have “the authority to revisit any prior pretrial orders.” [Motion at 6]. There is no realistic threat that a prospective transferee court would overturn this Court’s *Markman* decision, however, and none of Comcast’s cases suggest

otherwise.

While there is authority for the proposition that MDL transferee courts have the power to revisit prior decisions of the transferor court, cases discussing the issue make clear that this power is significantly circumscribed, as the transferor court's prior decisions must still be treated as the "law of the case." *See In re Multi-Piece Products Liability Litig.*, 653 F.2d 671, 678 (D.C. Cir. 1981); *see also Rivers*, 980 F. Supp. at 1361. As the court explained in *Degulis v. LXR Biotech., Inc.*, 928 F. Supp. 1301 (S.D.N.Y. 1996), this means that reconsideration of prior opinions is limited to those situations in which "there is an intervening change of controlling law, the availability of new evidence, or the need to correct a clear error or prevent a manifest injustice." *Id.* at 1309 (internal quotations omitted). Absent one or more of these "compelling circumstances," a transferee court should not "reopen[] issues previously decided." *Id.*

There is little reason to expect that any such compelling circumstances will arise in this case—and certainly the speculative possibility that some unforeseen event will make revisiting the Court's decision necessary is no reason to refrain from making it now. Comcast cites no case in which an MDL transferee court has overturned the *Markman* ruling of a transferor court, and there is no realistic threat that it could happen here.⁴

3. The Timing of the MDL Hearing Does Not Threaten to Moot This Court's Work.

Comcast's third argument is that, should the MDL motion be granted, "it will likely occur before a *Markman* Order in this action is finalized," thus potentially mooting this Court's work on the issue. [Motion at 6]. When the Panel takes the MDL motion under submission on May

⁴ In addition to the *Multi-Piece* and *Degulis* cases, Comcast cites *Pinney v. Nokia, Inc.*, 402 F.3d 430, 452-53 (4th Cir. 2005), and *Astarte Shipping Co. v. Allied Steel & Export Serv.*, 767 F.2d 86, 87 (5th Cir. 1985), in support of its argument that this Court's decisions could be subject to revision if the case is transferred. The transferee court in *Pinney* did revisit a ruling, but only after noting that the transferor judge had "explicitly acknowledged . . . [that the ruling] could be revisited later in the litigation." 402 F.3d at 453. In *Astarte*, the relevant comments were dicta, as there was no revisited ruling at issue. The question before the court in that case was whether the "review of any order of the district court in a transferred cause, made before transfer, is within the jurisdiction of the court of appeals of the circuit to which the cause has been transferred." 767 F.2d at 87. Thus, like *Pinney*, *Astarte* suggests little in the way of any real possible threat to this Court's rulings.

31, however, it will be well aware of this Court's *Markman* hearing two weeks earlier, and will understand that a claim-construction ruling is pending from the Court. Given that the Panel is bound by statute to "promote the just and efficient conduct" of the actions before it, 28 U.S.C. §1407(a), one could as easily argue that it is highly unlikely that the Panel would strip this Court of jurisdiction mere days or weeks away from an Order that could potentially provide a significant reduction in the amount of work necessary in many of the remaining cases.

4. The Pending Motions to Consolidate Do Not Support a Stay.

Comcast's final efficiency-related argument is that the Court should postpone the *Markman* hearing because, "[i]f the MDL Panel declines to transfer the actions, the Court must still decide whether . . . it should consolidate the actions pending against Comcast, Time Warner, Charter, and CoxCom." [Motion at 7]. Of course, this motion to stay and those pending motions to consolidate share the same objective, and thus the same flaw: they seek little more than to further delay resolution of a *Markman* process that, but for the disqualification of Rembrandt's former counsel, would have by now run its course. Comcast's argument thus suggests, in essence, that the Court should give the Defendants the relief they seek in order to give the Court time to decide whether to give the Defendants the relief they seek. That circular argument should be rejected.

As Rembrandt's briefing in response to the motions to consolidate demonstrates, consolidation of this case with those procedurally less-advanced cases should be denied because it would cause the unnecessary delay that the consolidation rules were designed to avoid. *See Mills v. Beech Aircraft Corp., Inc.*, 886 F.2d 758, 762 (5th Cir. 1989); FED. R. CIV. P. 42(a). In the same way, it would make no sense to stay this procedurally advanced litigation in the name of "promot[ing its] just and efficient conduct." 28 U.S.C. §1407.

III. CONCLUSION

For the foregoing reasons, Rembrandt respectfully requests that the Court deny Comcast's motion to stay pending resolution of the motion to consolidate before the Judicial Panel on Multidistrict Litigation.

Dated: April 27, 2007

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a), contemporaneously served upon all counsel who have consented to electronic service and served by first class mail on other counsel on this the 27th day of April, 2007.

/s/ Sam Baxter

Sam Baxter

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

vs.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS, LLC; and
COMCAST OF PLANO, LP,

Defendant.

Case No. 2:05-CV-443-TJW-CE

Jury demand

ORDER

Before the Court is Comcast's Motion to Stay Pending Resolution of Motion to Consolidate Before the Judicial Panel on Multidistrict Litigation. [Dkt. No. 162]. After having considered it, the Court is of the opinion that the motion to stay should be DENIED.

IT IS HEREBY ORDERED that Comcast's Motion to Stay Pending Resolution of Motion to Consolidate Before the Judicial Panel on Multidistrict Litigation is DENIED.

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

v.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS; LLC; and
COMCAST OF PLANO, LP,

Defendants.

Civil Action No. 2:05-CV-443-TJW-CE

Jury demand

UNOPPOSED MOTION TO EXCEED PAGE LIMIT

Defendants Comcast Corporation; Comcast Cable Communications; LLC; and Comcast of Plano, LP (“Comcast”) respectfully move to file Defendants’ Reply in Support of Motion to Stay Pending Resolution of the Motion to Consolidate Before the Judicial Panel on Multidistrict Litigation in excess of the page limit, in that it exceeds five (5) pages and states as follows:

1. On April 19, 2007, Comcast filed its Motion to Stay Pending Resolution of the Motion to Consolidate Before the Judicial Panel on Multidistrict Litigation and Motion for Expedited Consideration. Dkt. nos. 162 and 164. Plaintiff, Rembrandt Technologies, LP (“Rembrandt”), filed its Response pursuant to the Court’s expedited briefing schedule on April 27, 2007. Dkt. no. 167.

2. Under Local Rule CV-7(a)(2), “Any reply brief to an opposed non-dispositive motion...shall not exceed five pages, excluding attachments.” Rembrandt’s Response raises additional and complex issues which Comcast must address. This will cause Comcast’s reply to exceed the five page limit.

3. Counsel for Comcast has discussed this Motion with counsel for Rembrandt and it is

unopposed to this motion.

FOR ALL THESE REASONS, Comcast respectfully requests the Court to enter an Order granting Defendant's Unopposed Motion to Exceed Page Limit to permit Defendant to file its Reply in Support of Motion to Stay Pending Resolution of the Motion to Consolidate Before the Judicial Panel on Multidistrict Litigation in excess of five pages.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). All other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by certified mail, return receipt requested, on this 1st day of May, 2007.

/s/ Jennifer Haltom Doan
Jennifer Haltom Doan

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

REMBRANDT TECHNOLOGIES, LP,

Plaintiff,

v.

COMCAST CORPORATION; COMCAST
CABLE COMMUNICATIONS; LLC; and
COMCAST OF PLANO, LP,

Defendants.

Case No. 2:05-cv-443-TJW-CE

JURY

**COMCAST'S REPLY IN SUPPORT OF MOTION TO STAY
PENDING RESOLUTION OF MOTION TO CONSOLIDATE
BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION**

I. INTRODUCTION

Despite the fact that Coxcom's pending Motion to Transfer and Consolidate before the MDL Panel ("the MDL Motion") will be heard only two weeks from the currently-scheduled Markman hearing, and despite the fact that a decision from the MDL Panel transferring this case would result in all of the resources expended by the Court in construing those claims being wasted, Rembrandt opposes Comcast's Motion for a Stay. Rembrandt's Opposition fails to address the key aspects of the MDL process, and misstates the applicable law, in at least three key respects:

- If it grants the MDL Motion, the MDL Panel will divest this Court of jurisdiction and consolidate this case with the remaining Rembrandt actions, regardless of the procedural posture of this case;
- This Court's substantial effort in preparing for and presiding over the currently scheduled *Markman* hearing and construing the disputed claim terms will likely be wasted by a consolidation and transfer of this case; and
- Rembrandt cannot identify any significant prejudice resulting from staying this case for one month pending resolution of the MDL Motion.

Yet in the face of the potential consequences of the MDL Motion and the lack of any appreciable prejudice if a stay is granted, Rembrandt seeks to press forward with a *Markman* hearing for the very purpose of obtaining a construction of disputed claim terms in this action and asserting that construction against parties not currently represented in this action. This, Rembrandt argues, will promote judicial efficiency. But Rembrandt's position is without factual basis, incorrect as a matter of law, and improper as a matter of course.

Quite simply, there is little to be lost, and much to be gained, by staying this case for a few weeks while the MDL Panel determines whether it should consolidate and coordinate the various Rembrandt litigations. The MDL Panel will hear the MDL Motion on May 31, 2007. Any delay resulting from a temporary stay to permit the MDL Panel to rule on the MDL Motion

will be inconsequential. Given the substantial judicial economy to be realized by suspending the *Markman* hearing and ruling until after the MDL Panel determines whether to grant the MDL Motion, the Court should grant its Motion to Stay pending resolution of the MDL Motion.

II. ARGUMENT

A. Rembrandt Seeks to Distract the Court from the Jurisdictional Implications of the Pending MDL Motion By Focusing on the Procedural Posture of this Case.

Rembrandt devotes much of the first half of its Opposition to the incorrect argument that the procedural posture of this case weighs against granting a temporary stay pending resolution of the MDL Motion. *See* Rembrandt's Response In Opposition to Defendants' Motion to Stay ("Opp.") at 3-6. In support of this argument, Rembrandt cites a series of cases that it claims stand for the proposition that the procedural stage of case is "a critical factor" in determining whether a stay is appropriate. But *none* of the cases Rembrandt cites involve a stay pending the outcome of a motion to consolidate and transfer before the MDL Panel. Rather, all of these cases concern the very different situation of a request for a stay pending re-examination by the Patent and Trademark Office ("PTO"). As a result, those cases are inapplicable for at least two reasons.¹

First, re-examination of a patent by the PTO is almost always a lengthy process. A stay pending re-examination therefore could delay resolution of a case by years. *See, e.g., Lexington Lasercomb I.P.A.G. v. Unger*, No. 06-80079-CIV, 2006 WL 2370247, *1 (S.D. Fla. Jul. 31, 2006) (noting that "a stay of this action [pending re-examination] could result in an delay of months, if not years"); *NTP, Inc. v. Research In Motion, Ltd.*, 397 F. Supp. 2d 785, 788 (E.D. Va. 2005) (citing indefinite length of patent re-examination process as a basis for denying stay). In contrast, the stay being requested by Comcast is unlikely to result in delay of more than a few weeks. As the Court is aware, the MDL Panel has scheduled oral argument on the MDL Motion for May 31, 2007, and it is reasonable to expect a decision one way or the other shortly

¹ Notably, in one of the cases cited by Rembrandt, *GPAC, Inc. v. D.W.W. Enter., Inc.*, 144 F.R.D. 60 (D.N.J. 1992), the court granted a stay, notwithstanding the fact that the case already had been pending for sixteen months. *Id.* at 64, 66.

thereafter. For example, the MDL Panel issued its decision to consolidate the *Compression Labs* matters, three of which were pending in the Eastern District of Texas, less than three weeks after it heard oral argument on the consolidation motion. *See* Exhibit A, Notice of Hearing Session for January 27, 2005, *In re Compression Labs, Inc., Patent Litigation*, MDL No. 1654; and Exhibit B, February 16, 2005, Transfer Order for *In re Compression Labs, Inc., Patent Litigation*, MDL No. 1654.

Second, as the MDL Panel decisions cited by Rembrandt illustrate,² whether consolidation and transfer of this case pursuant to 28 U.S.C. § 1407 is appropriate given its procedural posture is an issue for the MDL Panel to consider and resolve. And although Rembrandt argues otherwise, *see* Opp. at 10-11, whether or not this Court grants a temporary stay pending the MDL Panel's decision—or instead chooses to proceed with the claim construction hearing—is unlikely to affect the Panel's deliberations. Indeed, in the recent case of *Katz v. Citibank*, the MDL Panel granted a motion to consolidate and transfer six months *after* Judge Folsom had held a claim construction hearing and less than two months from the scheduled trial date. *See In re Katz Interactive Call Processing Patent Litigation*, 2007 WL 899462 (J.P.M.L. March 20, 2007) (attached as Exhibit E to Dkt. no. 162); *see also* Ronald A. Katz's Memorandum of Law in Opposition to Motion to Consolidate, at p. 3-5, MDL Docket No. 1816 (attached as Exhibit C). Thus, proceeding with claim construction will not serve to "accelerate" resolution of this litigation. Rather, as discussed in detail below, it will only subject the Court and the parties to a burdensome and expensive exercise that will ultimately be in vain if the MDL Motion is granted.

For these and other reasons, courts evaluating whether to grant a stay pending the outcome of an MDL motion generally do not consider the stage of proceedings. *See, e.g., Rivers v. Walt Disney Co.*, 980 F. Supp. 1358, 1360 (C.D. Cal. 1997) (listing factors court should consider). Indeed, as noted, Rembrandt has failed to cite, and Comcast is not aware of, a single case in the MDL context where the stage of proceedings was cited as a relevant factor weighing

² *See* Opp. at 4 n. 3 and cases cited therein.

against a stay.

Rembrandt also claims that MDL Panel's Rules of Procedure "do not favor a stay." Opp. at 2. However, the MDL Rules of Procedure themselves express no opinion one way or the other regarding stays pending the resolution of MDL motions. The MDL Panel's rules merely specify that the pendency of a motion to consolidate does not automatically stay pretrial proceedings or deprive the court of jurisdiction. See Joint Panel on Multidistrict Litigation Rule of Procedure 1.5; *Rivers v. Walt Disney Co.*, 980 F. Supp. at 1360. Whether to grant a stay is committed to the discretion of the court where, as here, "it serves the interests of judicial economy and efficiency." *Id.* at 1360 (declining to rule on class certification motion and granting stay pending MDL Panel determination). And, as the *Rivers* court recognized, "a majority of courts have concluded that it is often appropriate to stay preliminary pretrial proceedings while a motion to transfer and consolidate is pending with the MDL Panel because of the judicial resources that are conserved." *Id.* at 1362 (*emphasis added*).

B. Proper Consideration of Judicial Economy and the Potential for Prejudice Counsels in Favor of Granting a Temporary Stay

By ignoring the substantial jurisdictional consequences of the pending MDL Motion, Rembrandt's analysis of the factors traditionally considered by courts in deciding whether to grant to a stay is fatally flawed. Contrary to Rembrandt's assertions, this Court cannot simply "retain jurisdiction over this case and proceed with its timely resolution." Opp. at 7. Rather, if the MDL Motion is granted, this Court will be "deprived of jurisdiction until the case is returned to it." *Astarte Shipping Co. v. Allied Steel & Expert Serv.*, 767 F.2d 86, 87 (5th Cir. 1985). "A transfer under section 1407 transfers the action lock, stock, and barrel." *Id.* Thus, the question before this Court is not whether to "retain jurisdiction," but simply whether to immediately proceed with a claim construction hearing, notwithstanding the fact that the Court could well lose jurisdiction over the case in the very near future, or to stay the case for a short period of time to permit the MDL Panel to resolve the consolidation issue. Each of the three factors articulated in the *Rivers* case for addressing this very issue strongly weighs in favor of a stay here.

1. Substantial judicial resources will be saved by avoiding duplicative litigation if the Motion to Consolidate is granted.

Rembrandt summarily dismisses, or ignores altogether, the substantial resources that this Court, and the District Judge, will expend in construing the claims of the four asserted patents that will be saved if the MDL Motion is granted. Conserving these resources strongly favors granting the proposed stay.³

a. The Markman hearing and order will be rendered moot if the MDL Panel grants the MDL Motion.

Rembrandt argues that proceeding with claim construction on May 14th will conserve judicial resources and promote a more efficient resolution of all of the related Rembrandt cases. *See Opp.* at 9 (the “best way to ensure that there will be no need for any duplication ...is to complete the claim construction process now.”). Rembrandt is wrong as a matter of law and as a matter of common sense. “Completing the Markman process now,” as Rembrandt requests, will not ensure that there will be no duplication of work should the MDL Motion be granted; instead, it all but guarantees duplicative work. *See Opp.* at 7.

If the MDL Motion is granted, resolution by this Court of claim construction issues likely will have no effect on further proceedings. Though Rembrandt argues that the Court’s efforts will not be wasted because the Court’s claim construction ruling “would be—at a minimum—the ‘law of the case,’ and would not be subject to revision by the transferee court absent “compelling circumstances,” the law indicates otherwise. *See Opp.* at 9. It is well-established that “[a] transferee court in a multidistrict litigation thus has the power to modify interlocutory orders entered by the transferor court prior to transfer under 28 U.S.C. § 1407.” *See Degulis v. LXR Biotech, Inc.*, 928 F. Supp. 1301, 1309 (S.D.N.Y. 1996) (citation omitted); *accord Astarte*, 767

³ Notably, in the *Katz* case Rembrandt’s present counsel, representing Target, took the opposite position and filed an emergency motion to continue the claim construction hearing two days before the hearing was scheduled to take place contending that judicial economy would best be served by postponing the claim construction hearing in order to consolidate the *Katz* matters for claim construction. *See Target’s Emergency Motion to Consolidate*, No. 5:05CV142 (attached as Exhibit D); *Target’s Emergency Motion to Continue Markman Hearing*, No. 5:05CV142 (attached as Exhibit E). Rembrandt’s present counsel contended that having numerous separate claim construction hearings and claim construction rulings would not promote judicial economy or efficiency. *Target’s Emergency Motion to Consolidate* at p. 4-6, No. 5:05CV142 (attached as Exhibit D).

F. 2d at 87 (transferee district court has “the power and the obligation” to rescind any orders which it concludes are incorrect). And it is far more likely than not that the transferee court would chose to do so in this case with respect to any claim construction ruling issued by this Court.

Claim construction rulings, particularly when issued prior to the close of discovery, are rarely considered final in any case, much less in cases consolidated pursuant to 28 U.S.C. § 1407. To the contrary, as the Federal Circuit has made clear: “District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves.” *Jack Guttman, Inc. v. Kopykake Enter., Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002); *see also Conoco, Inc. v. Energy & Envtl. Intern., L.C.*, 460 F.3d 1349, 1359 (Fed. Cir. 2006) (“a district court may engage in claim construction during various phases of litigation, not just in a Markman order.”); *Utah Med. Prods., Inc. v. Graphic Controls Corp.*, 350 F.3d 1376, 1381 (Fed. Cir. 2003) (holding that district court did not err in amending its claim construction during oral arguments for pretrial motions nearly two years after the original construction). Thus, contrary to Rembrandt’s contentions, any claim construction order issued by this Court would not constitute immutable “law of the case.”

Furthermore, even if claim construction rulings were not otherwise routinely revisited and revised, transfer of an action by the MDL Panel can constitute, as here, the type of “significant” and “fundamental” change warranting reconsideration of the order by the transferee court. *Degulis*, 928 F. Supp. at 1309 (S.D.N.Y. 1996); *see also Rivers*, 980 F. Supp. at 1361 (recognizing that transferee courts “vacate or modify previous rulings of the transferor judge” notwithstanding the “law of the case” doctrine).

A principal goal of consolidation pursuant to 28 U.S.C. § 1407 is to facilitate “consistent rulings on important pretrial legal issues.” *Hertz Corp. v. The Gator Corp.*, 250 F. Supp. 2d 421, 427 (D.N.J. 2003) (declining to rule on motion for preliminary injunction and granting stay pending MDL determination to avoid potential for conflicting decisions). Claim construction is one of the most important pre-trial issues to be resolved by a court in patent litigation.

Consequently, if the MDL Panel consolidates and transfers the Rembrandt cases, whichever court is assigned the consolidated actions will likely understand the need to issue a single, comprehensive claim construction order that applies to all of the Rembrandt cases to ensure that the Rembrandt patents are interpreted uniformly in each of the related cases. Since the defendants in the other Rembrandt actions cannot be bound by a claim construction order resulting from briefing and a hearing in which they did not have any right or opportunity to participate, if this Court elects to proceed with claim construction in this case, any transferee court assuming jurisdiction over this case will have little choice but to re-open claim construction to ensure that all of the defendants have an opportunity to be heard.

Given this jurisdictional reality, should the MDL Panel grant the MDL Motion, this Court's claim construction efforts will have been in vain. Just as in *Rivers*, if the MDL Panel ultimately decides to consolidate this case before another court, "this Court will have needlessly expended its energies familiarizing itself with the intricacies of a case that would be heard by another judge." *Rivers*, 980 F. Supp.at 1360.

b. The Court will expend substantial resources between the Markman hearing and issuing a claim construction order.

Rembrandt also posits that, because the Court and the parties already have expended resources in this case and in briefing claim construction, granting a temporary stay would not conserve judicial resources. This argument too flies in the face of common sense.

Regardless of what effort already has been expended on claim construction by the parties, a claim construction hearing and order will require substantial additional resources. Rembrandt's argument ignores the effort required by this Court to issue an order construing the disputed claims (including resolving any issues that may be appealed to the District Judge). Given the number of disputed claim terms (26) and the substantial evidence submitted by the parties (over 100 pages in briefing alone), preparation of a claim construction order will entail weeks of judicial effort. *See Comcast Motion at 7.* Rembrandt even admits as much, stating that, if a *Markman* hearing were held on May 14, the Court would be "days or weeks away" from

a *Markman* ruling by the time the MDL Motion is heard on May 31. *See Opp.* at 11.

Despite the Court's "familiarity" with this action, Rembrandt cannot contend that holding a *Markman* hearing and construing the disputed terms in the asserted claims will not require substantial additional judicial resources. These resources will be saved by granting a short stay in the event that the MDL Panel grants the MDL Motion.

c. The timing of the MDL hearing favors granting the stay.

Rembrandt's unsupported statement that "the timing of the MDL hearing does not threaten to moot this Court's work" similarly ignores the applicable facts and turns the premise of multi-district litigation on its head. *See Opp.* at 10. The MDL Hearing will be held two weeks from the date of the currently-scheduled *Markman* hearing. Even if Rembrandt were right—which it is not—that a transferee Court would be bound by a claim construction order here, it strains credulity to believe that a claim construction order will be final by the time the MDL panel decides the MDL Motion. *See Comcast Motion* at 11.

Instead, the most likely scenario is that the Court will not "complete the *Markman* process" prior to a decision by the MDL Panel following the May 31, 2007 hearing. As Comcast demonstrated in its Motion, for the four patents at issue in this case, the parties seek construction of some twenty-six disputed claim terms. *See Comcast Motion* at 11. *See also* Second Amended Joint Claim Construction and Prehearing Statement dated Jan 22, 2007 (Comcast Dkt. no. 136). Once the Court issues its Order construing those claims, the parties by right have the opportunity to appeal that Order to the District Court within ten days. *See* 28 U.S.C. § 636(b)(1)(A); E.D. Tex. Local Rules Appendix B, Rule 4(A). Should the MDL Motion be granted, the Court may lose jurisdiction over this matter before any claim construction ruling can be entered by the District Court.

Moreover, Rembrandt wrongly attempts to use these deadlines by arguing that the Court should forge ahead with the substantial expenditure of resources required by the *Markman* briefing because "one could easily argue that it is highly unlikely that the Panel would strip this Court of jurisdiction mere days or weeks away from an Order...." This is folly. In determining

whether to stay this action, the sensible and proper course is not to seek to predict the outcome of the MDL Motion, but to allow the MDL Motion to be resolved—which will happen imminently—before engaging in potentially-wasted efforts. The case law expressly directs that a court considering a Motion to Stay consider the resources that will be gained “if cases are in fact coordinated.” *Rivers*, 980 F. Supp. at 1360. Rembrandt’s argument simply provides further evidence of the resources that will be saved if the MDL Motion is granted and counsels in favor of staying this case.

2. Comcast will experience hardship and inequity by proceeding with a Markman hearing prior to a decision by the MDL Panel.

Similarly, Rembrandt’s misstatement of the law undermines its assertion that Comcast will suffer no hardship or inequity by proceeding with a Markman hearing. Fundamentally, Rembrandt argues that, because Comcast will be subject to a Markman hearing, and because it has already submitted briefing regarding disputed claim terms, Comcast can suffer no hardship with proceeding. Yet Rembrandt ignores that if the MDL Panel consolidates the Rembrandt cases, its efforts in preparing for and participating in the Markman hearing will be rendered moot. *See supra*, at 5-7. Comcast should not be required to present its arguments on claim construction to two different judges in two separate hearings. This is a principal reason why Comcast requested—and the Court granted—Comcast’s Motion for Expedited Hearing of this Motion.

3. Rembrandt fails to make a showing of prejudice resulting from granting a temporary stay.

Rembrandt’s only asserted prejudice that it would suffer from a temporary stay is that the case will be further “delayed.” This circular and self-serving argument fails to identify any actual prejudice to Rembrandt of a delay of a few weeks, and omits that any past delay suffered by Rembrandt is a result of Rembrandt’s own decisions, not Comcast’s.

Rembrandt’s only support for its purported prejudice is a misreading of the Court’s Order disqualifying Rembrandt’s former counsel. *Opp.* at 7. Rembrandt cites this Order for the proposition that the Court should ensure that “Rembrandt be able to ... prosecute this case

without undue delay.” *See* Opp. at 7, citing Dkt. No. 144 at 7. Yet in that Order, the Court’s analysis of prejudice to Rembrandt rested, not on the potential for delay, but the purported prejudice arising from the fact that Fish & Richardson was Rembrandt’s “counsel of choice in this case and is extremely familiar with the technology at issue.” Dkt. No. 144 at 7. Examining this identified prejudice, not any potential for delay, the Court determined that this interest was “not sufficient to overcome the grounds for disqualification.” *Id.* The language cited by Rembrandt demonstrates the Court’s confidence that Rembrandt will be able to secure replacement counsel without undue delay, it is not a Court-mandated schedule. *Id.* Rembrandt’s reliance on this single statement as evidence of prejudice is misplaced. Nothing in that Order mandates denying Comcast’s Motion for a temporary stay.

Indeed, any delay in this action to date is attributable exclusively to Rembrandt and its counsel, not Comcast. The delay in the schedule caused by the disqualification of Rembrandt’s counsel and Rembrandt’s search for replacement counsel should not factor into the Court’s analysis here. Any harm that Rembrandt may or may not have “suffered ... due to the disqualification of its former counsel” would not be exacerbated by granting Comcast’s request for a short stay here.

Finally, Rembrandt cannot—as it implies—contend that it will be prejudiced by having a transferee court construe the disputed claims of the four asserted patents. Rembrandt chose to file fourteen separate lawsuits in three different jurisdictions on the same patents. Rembrandt’s Opposition makes clear its desire to obtain a claim construction ruling in the present case against Comcast so as to impose that construction on parties not present here. There is no “prejudice” that can result from a unified and coordinated claim construction process before a single judge where all interested parties can be heard. Indeed, the potential prejudice resulting from the schedule here would be to the other Rembrandt Defendants, against whom Rembrandt seeks to obtain a claim construction without affording them a chance to be heard. Such a result would run counter to the very purpose of multidistrict litigation—to coordinate the pretrial management of actions sharing common facts and issues of law in a just and efficient manner. *See* 28 U.S.C.

§ 1407(a).

Rembrandt's litigation decisions have consequences. That Rembrandt filed these actions at different times and in different courts is its own doing. And as a result of the substantial overlap in law, facts, and allegations that pervade Rembrandt's actions, a hearing by the MDL Panel on whether coordination and consolidation of these cases makes sense. Comcast does not ask that the Court prejudge the result of that hearing or prejudice the rights of Rembrandt in staying the present case. Instead, Comcast asks only that the MDL Panel, and this Court, be given the chance to address the issues raised by these separate actions in a single and unified manner, and to refrain from taking actions that would unnecessarily complicate or result in duplicative or wasted resources.

III. CONCLUSION

Staying this action pending resolution of the Motion to Transfer and Consolidate currently pending before the MDL Panel will promote judicial efficiency and will prevent significant hardship and inequity to Comcast and the other Rembrandt defendants, while causing Rembrandt no appreciable prejudice. Consequently, for all the foregoing reasons, Comcast hereby requests that the Court grant its motion to stay.

Respectfully yours,

/s/ Jennifer Haltom Doan

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**ATTORNEYS FOR DEFENDANT
COMCAST CORPORATION, COMCAST
CABLE COMMUNICATIONS, LLC,
COMCAST OF PLANO**

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). All other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by certified mail, return receipt requested, on this 1st day of May, 2007.

/s/ Jennifer Haltom Doan
Jennifer Haltom Doan

Exhibit A

JHD
KW
file

**UNITED STATES OF AMERICA
JUDICIAL PANEL ON MULTIDISTRICT LITIGATION**

CHAIRMAN:
Judge Wm. Terrell Hodges
United States District Court
Middle District of Florida

MEMBERS:
Judge John F. Keenan
United States District Court
Southern District of New York

Judge D. Lowell Jensen
United States District Court
Northern District of California

Judge J. Frederick Motz
United States District Court
District of Maryland

Judge Robert L. Miller, Jr.
United States District Court
Northern District of Indiana

Judge Kathryn H. Vratil
United States District Court
District of Kansas

Judge David R. Hansen
United States Court of Appeals
Eighth Circuit

DIRECT REPLY TO:

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Fax: [202] 502-2888

<http://www.jpml.uscourts.gov>

December 14, 2004

NOTICE OF HEARING SESSION

Dear Counsel:

12-20-04

Pursuant to the order of the Judicial Panel on Multidistrict Litigation filed today, you are hereby notified that a hearing session has been scheduled to consider various matters pursuant to 28 U.S.C. § 1407.

DATE OF HEARING SESSION: January 27, 2005

LOCATION OF HEARING SESSION: United States Courthouse and Federal Building
2110 First Street
Fort Myers, Florida 33901

TIME OF HEARING SESSION: In those matters designated for oral argument, counsel presenting oral argument must be present at **8:30 a.m.** in order for the Panel to allocate the amount of time for oral argument. Oral argument will commence at **9:30 a.m.**

Please direct your attention to the enclosed Hearing Session Order and Schedule of Matters for Hearing Session for a listing of the matters scheduled for consideration at this hearing session.

- Section A of this Schedule lists the matters designated for oral argument.
- Section B of this Schedule lists the matters that the Panel has determined to consider **without oral argument**, pursuant to Rule 16.1(c), R.P.J.P.M.L., 199 F.R.D. 425, 439 (2001).

For those matters listed on Section A of the Schedule, the enclosed blue "Notice of Presentation or Waiver of Oral Argument" must be returned to this office no later than **January 10, 2005**. Note the procedures governing Panel oral argument which are outlined on the enclosed "Procedures for Oral Argument before the Judicial Panel on Multidistrict Litigation." These procedures are strictly adhered to and your cooperation is appreciated.

Very truly,

Michael J. Beck

Michael J. Beck
Clerk of the Panel

c: Clerk, U.S. District Court for the Middle District of Florida

JUDICIAL PANEL ON
MULTIDISTRICT LITIGATION
FILED

Dec. 14, 2004

MICHAEL J. BECK
CLERK OF THE PANEL

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

***WM. TERRELL HODGES, CHAIRMAN, JOHN F. KEENAN, D. LOWELL
JENSEN, J. FREDERICK MOTZ, ROBERT L. MILLER, JR., KATHRYN H.
VRATIL AND DAVID R. HANSEN, JUDGES OF THE PANEL***

HEARING SESSION ORDER

IT IS ORDERED that on January 27, 2005, a hearing session will be held in Fort Myers, Florida, to consider the matters on the attached Schedule under 28 U.S.C. § 1407.

IT IS FURTHER ORDERED that at said hearing session the Panel may, on its own initiative, consider transfer of any or all of the actions in those matters to any district or districts.

IT IS FURTHER ORDERED that at said hearing session the matters listed on Section A of the attached Schedule shall be designated for oral argument.

IT IS FURTHER ORDERED that at said hearing session the matters listed on Section B of the attached Schedule shall be considered without oral argument, pursuant to Rule 16.1(c), R.P.J.P.M.L., 199 F.R.D. 425, 439 (2001). The Panel reserves the prerogative, on any basis including submissions of parties pursuant to Panel Rule 16.1(b), to issue a subsequent notice designating any of those matters for oral argument.

IT IS FURTHER ORDERED that the Clerk of the Judicial Panel on Multidistrict Litigation shall direct notice of this hearing session to counsel for all parties involved in the matters on the attached Schedule.

FOR THE PANEL:



Wm. Terrell Hodges
Chairman

SCHEDULE OF MATTERS FOR HEARING SESSION
January 27, 2005 -- Fort Myers, Florida

SECTION A
MATTERS DESIGNATED FOR ORAL ARGUMENT

MDL-1654 -- In re Compression Labs, Inc., Patent Litigation

Motion of Sun Microsystems, Inc.; Yahoo! Inc.; and Google, Inc., for centralization of certain of the following actions in the United States District Court for the Northern District of California, or in the alternative, the United States District Court for the District of Delaware:

Northern District of California

Sun Microsystems, Inc. v. Compression Labs, Inc., C.A. No. 3:04-3124
Google, Inc. v. Compression Labs, Inc., et al., C.A. No. 4:04-3934

District of Delaware

Agfa Corp., et al. v. Compression Labs, Inc., et al., C.A. No. 1:04-818
Yahoo! Inc. v. Compression Labs, Inc., et al., C.A. No. 1:04-918
Audiovox Corp., et al. v. Compression Labs, Inc., et al., C.A. No. 1:04-1293

Eastern District of Texas

Compression Labs, Inc. v. Adobe Systems Inc., et al., C.A. No. 2:04-158
Compression Labs, Inc. v. Dell, Inc., et al., C.A. No. 2:04-159
Compression Labs, Inc. v. Acer America Corp., et al., C.A. No. 2:04-294

Schedule of Matters for Hearing Session, Section A
Fort Myers, Florida

p. 3

MDL-1657 -- In re Vioxx Products Liability Litigation

Motion of plaintiff Salvadore Christina, Sr., for centralization of certain of the following actions in the United States District Court for the Eastern District of Louisiana; and motion, as amended, of defendant Merck & Co., Inc., for centralization of the following actions in the United States District Court for the District of Maryland, or in the alternative, the United States District Court for the Southern District of Indiana or the United States District Court for the Northern District of Illinois:

Middle District of Alabama

Paul Turner, Sr. v. Merck & Co., Inc., C.A. No. 1:04-999
Danny M. Wilson v. Merck & Co., Inc., C.A. No. 2:03-844

Northern District of Alabama

Carolyn O. Hensley, etc. v. Merck & Co., Inc., C.A. No. 1:03-906
William Cook v. Merck & Co., Inc., et al., C.A. No. 2:02-2710
Sharon Scott Jones v. Merck & Co., Inc., C.A. No. 5:04-3079

Southern District of Alabama

Carolyn Younge, etc. v. Merck & Co., Inc., et al., C.A. No. 1:03-125

Eastern District of Arkansas

Linda Sue Otts v. Merck & Co., Inc., C.A. No. 5:04-57

Western District of Arkansas

Bobby Brown, et al. v. Merck & Co., et al., C.A. No. 4:04-4140
Arthur Fulton, etc. v. Merck & Co., Inc., C.A. No. 6:03-6107

Central District of California

Charles Ashman v. Merck & Co., Inc., C.A. No. 2:04-8225
Gohar Pargar v. Merck & Co., Inc., C.A. No. 2:04-9206
Esther Bloom-Thomen v. Merck & Co., Inc., C.A. No. 2:04-9245
Janet Briggs v. Merck & Co., Inc., C.A. No. 2:04-9275

Schedule of Matters for Hearing Session, Section A
Fort Myers, Florida

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MDL-1657 (Continued)

Southern District of Illinois

Roberta Walson, etc. v. Merck & Co., Inc., C.A. No. 3:04-27
Diana Caruso v. Merck & Co., Inc., C.A. No. 3:04-759
John Ellis v. Merck & Co., Inc., et al., C.A. No. 3:04-792
Doris Rensing v. Merck & Co., Inc., et al., C.A. No. 3:04-804
Bilbrey v. Merck & Co., Inc., C.A. No. 3:04-836

Southern District of Indiana

Carla A. McCullough v. Merck & Co., Inc., C.A. No. 1:03-1523
Estate of Lowell D. Morrison v. Merck & Co., Inc., C.A. No. 1:03-1535
Kimberly Van Jelgerhuis, et al. v. Merck & Co., Inc., C.A. No. 1:04-1651

District of Kansas

Vicky Hunter v. Merck & Co., Inc., C.A. No. 2:04-2518
Betty S. Smith v. Merck & Co., Inc., C.A. No. 6:04-1355

Eastern District of Kentucky

Daniel K. Williams v. Merck & Co., Inc., C.A. No. 2:04-235
Richard J. Getty, et al. v. Merck & Co., Inc., C.A. No. 5:04-452

Eastern District of Louisiana

Salvadore Christina, Sr. v. Merck & Co., Inc., C.A. No. 2:04-2726
Angelis Alexander v. Merck & Co., Inc., C.A. No. 2:04-2845
Leonce Davis v. Merck & Co., Inc., C.A. No. 2:04-2937
Mary V. Gagola v. Merck & Co., Inc., C.A. No. 2:04-3053
Christine L. Parr v. Merck & Co., Inc., C.A. No. 2:04-3054
Clifton Adam Savage, Sr. v. Merck & Co., Inc., C.A. No. 2:04-3055
Delores Thomas Robertson v. Merck & Co., Inc., C.A. No. 2:04-3056
Howard Mark Falick v. Merck & Co., Inc., C.A. No. 2:04-3060
Warren L. Gottsegen, M.D. v. Merck & Co., Inc., C.A. No. 2:04-3065

Exhibit B

A CERTIFIED TRUE COPY

FEB 16 2005

ATTEST
FOR THE JUDICIAL PANEL ON
MULTIDISTRICT LITIGATION

RELEASED FOR PUBLICATION

DOCKET NO. 1654

JUDICIAL PANEL ON
MULTIDISTRICT LITIGATION

FEB 16 2005

FILED
CLERK'S OFFICE

FEB 24 2005

RICHARD W. WIEKING
CLERK, U.S. DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

**BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION
IN RE COMPRESSION LABS, INC., PATENT LITIGATION**

**BEFORE WM. TERRELL HODGES, CHAIRMAN, JOHN F. KEENAN, D.
LOWELL JENSEN, J. FREDERICK MOTZ,* ROBERT L. MILLER, JR.,
KATHRYN H. VRATIL AND DAVID R. HANSEN, JUDGES OF THE PANEL**

TRANSFER ORDER

This litigation currently consists of the eight actions listed on the attached Schedule A and pending in three districts as follows: three actions each in the District of Delaware and the Eastern District of Texas, and two actions in the Northern District of California. Now before the Panel is a motion, pursuant to 28 U.S.C. § 1407, for centralization of all actions in the Northern District of California or, in the alternative, the District of Delaware. Movants are three companies, Google Inc., Sun Microsystems, Inc., and Yahoo! Inc., that i) have each brought a separate action in this docket (two in the Northern District of California and one in the District of Delaware) and ii) are among the eleven defendants in the last-filed Eastern District of Texas action. Joining in support of 1407 centralization are 28 companies that are sued in one or the other of the three Texas actions (most of these companies are also among the 29 plaintiffs in the remaining two District of Delaware actions). These respondents agree that the Northern District of California would be a convenient forum for this litigation, but they also suggest that the District of Delaware would be an apt forum choice. Opposed to Section 1407 transfer are i) Compression Labs, Inc. (Compression), which is the holder of the patent at issue in this litigation, is the plaintiff in the Eastern District of Texas actions, and is a defendant in the remaining actions; ii) Compression's parent, and iii) General Instrument Corp., the onetime co-holder of the patent at issue. If the Panel nevertheless orders transfer over their objections, then these three parties would favor selection of the Eastern District of Texas as transferee district.

On the basis of the papers filed and hearing session held, the Panel finds that the actions in this litigation involve common questions of fact and that centralization in the Northern District of California will serve the convenience of the parties and witnesses and promote the just and efficient conduct of the litigation. All eight MDL-1654 actions involve the same complex patent, U.S. Patent No. 4,698,672, entitled "Coding System for Reducing Redundancy." In each action the parties dispute whether the patent is valid and whether it is infringed by products that use the "JPEG" international standard for compression of the digital still images that are used in a wide variety of electronic devices. Centralization under Section 1407 is necessary in order to eliminate duplicative discovery, prevent inconsistent pretrial rulings, and conserve the resources of the parties, their counsel and the judiciary.

*Judge Motz took no part in the disposition of this matter.

I hereby certify that the enclosed
instrument is a true and correct copy
of the original on file in my office.

ATTEST:

RICHARD W. WIEKING
Clerk, U.S. District Court
Northern District of California

By: *[Signature]*

Deputy Clerk

Date: 2/24/05

- 2 -

Opposing parties have argued that Section 1407 transfer is unnecessary because i) there exists a prospect that the multidistrict character of this docket may be eliminated by court action on various motions currently pending in the involved districts; ii) it would be preferable to address any common matters through alternatives to Section 1407 transfer; and iii) transfer would be unduly burdensome. We are not persuaded by these contentions. While we applaud voluntary efforts to cooperate and coordinate among parties, counsel and courts, we observe that transfer under Section 1407 in this instance has the benefit of placing all actions in this docket, as well as any additional related actions that may be forthcoming, before a single transferee judge who can structure pretrial proceedings to ensure that pretrial discovery and rulings will occur in a manner that minimizes the risk of duplication or inconsistency and that thereby leads to the just and expeditious resolution of all actions to the overall benefit of those involved.

In concluding that the Northern District of California is an appropriate forum for this docket, we note that the California district, where two MDL-1654 constituent actions are already proceeding, is an easily accessible, metropolitan district that is well equipped with the resources that this complex docket is likely to require.

IT IS THEREFORE ORDERED that, pursuant to 28 U.S.C. § 1407, the actions listed on Schedule A and pending outside the Northern District of California are transferred to the Northern District of California and, with the consent of that court, assigned to the Honorable Phyllis J. Hamilton for coordinated or consolidated pretrial proceedings with the actions pending in that district and listed on Schedule A.

FOR THE PANEL:



Wm. Terrell Hodges
Chairman

SCHEDULE A

MDL-1654 -- In re Compression Labs, Inc., Patent Litigation

Northern District of California

Sun Microsystems, Inc. v. Compression Labs, Inc., C.A. No. 3:04-3124
Google, Inc. v. Compression Labs, Inc., et al., C.A. No. 4:04-3934

District of Delaware

Agfa Corp., et al. v. Compression Labs, Inc., et al., C.A. No. 1:04-818
Yahoo! Inc. v. Compression Labs, Inc., et al., C.A. No. 1:04-918
Audiovox Corp., et al. v. Compression Labs, Inc., et al., C.A. No. 1:04-1293

Eastern District of Texas

Compression Labs, Inc. v. Adobe Systems Inc., et al., C.A. No. 2:04-158
Compression Labs, Inc. v. Dell, Inc., et al., C.A. No. 2:04-159
Compression Labs, Inc. v. Acer America Corp., et al., C.A. No. 2:04-294

Exhibit C

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re:

**Katz Interactive Call Processing Patent
Litigation**

MDL Docket No. 1816

**PLAINTIFF'S MEMORANDUM OF LAW IN OPPOSITION TO
TARGET'S MOTION FOR TRANSFER AND CONSOLIDATION
OF KATZ TECHNOLOGY LICENSING PATENT LITIGATION
PURSUANT TO 28 U.S.C. § 1407**

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RONALD A. KATZ TECHNOLOGY LICENSING, L.P.

Plaintiff Ronald A. Katz Technology Licensing, L.P. ("Katz") submits this Memorandum of Law in Opposition to the Motion of Defendants Target Corporation, Target Bank, and Target National Bank (collectively "Target") for Transfer and Consolidation of Katz Technology Licensing Patent Litigation Pursuant to 28 U.S.C. § 1407 ("Motion").

I. INTRODUCTION

Consolidation and transfer of these patent infringement cases is not warranted because: (1) insufficient common issues of fact exist in that each defendant's accused system is unique and presents individualized infringement and damages issues; (2) neither convenience nor judicial efficiency would be achieved by imposing these numerous cases on a single court in an already over-burdened judicial district where no related case is currently pending; and (3) the substantial disruption and delay of consolidation and transfer would impede the resolution of all cases. Many of the defendants join Katz in opposing this motion and are working towards proposed stipulations to avoid duplicative discovery and to coordinate case management among the segregated cases. This indicates that many of those most familiar with these cases believe that the motion should be denied and would not yield efficiencies for the parties or courts.

Consolidation and transfer is particularly inappropriate because of the status of one of the cases, *Ronald A. Katz Tech. Licensing, L.P. v. Citibank, et. al.*, (the "Citibank case"), which is currently pending before the Hon. David Folsom in the Eastern District of Texas ("E.D. Texas") and is set for trial on May 8, 2007. The parties and the court have invested substantial resources on numerous substantive motions and case management matters, including issuance of a comprehensive scheduling order and case management plan, appointment of a technical expert for the court, a tutorial hearing, extensive *Markman* patent claim construction briefing and argument and multiple discovery activities and motions. Judge Folsom's *Markman* order is anticipated shortly and will inform the parties about the scope and interpretation of the patents, shape the litigation for expeditious movement to trial, and may foster settlement discussions, all of which would be disrupted and delayed by consolidation and transfer. Thus, while Katz urges that consolidation and transfer is not necessary at all, if the Panel concludes otherwise, the

Citibank case should be excluded from such an order.

If the Panel determines that consolidation and transfer is appropriate, the transferee court should be the E.D. Texas because it: (i) is in the state where more defendants reside than any other; (ii) is centrally located and most accessible to the largest number of parties and witnesses; (iii) has the infrastructure to support MDL litigation; (iv) has enacted and regularly administers a set of patent litigation rules enabling the expeditious and efficient resolution of patent cases; (v) is one of the plaintiff's two chosen venues; (vi) has the least crowded docket of any of the relevant districts which would likely be a transferee court; (vii) is the district in which the most cases are currently pending involving the Katz patents; and (viii) has current and extensive legal and practical experience with the Katz patents by virtue of the time and resources that the Court and its technical advisor have invested to manage and decide issues in the *Citibank* case. By contrast, Target's proposed venue, the Central District of California ("C.D. California"), has no Katz patent case currently pending, is one of the most over-burdened courts in the country and is inconvenient to the overwhelming majority of the defendants and witnesses.

The Katz cases are presently distributed among four federal judges who are well versed and skilled in patent litigation and who are already actively managing the cases. Contrary to the picture painted by Target, the cases are progressing expeditiously. Answers and counterclaims have been filed in most of the cases, at least two case management conferences are scheduled, and pre-discovery Rule 26 communications among counsel are well underway. Moreover, to the extent common issues exist about the technology, the patents, or their validity and/or enforceability, the potential for duplicative discovery is minimal because of the extensive prior litigation of the Katz patents, and because of the willingness of the non-movant parties to enter into stipulations to share and otherwise coordinate discovery and manage the cases. Conversely, consolidation of the patent actions, which undisputedly present unique issues of infringement and damages as to 175 defendants, and transfer of those cases to a single judge, would create an overwhelmingly complex proceeding certain to result in delay and added expense for all parties.

II. FACTUAL BACKGROUND

Katz is the plaintiff in actions pending in the E.D. Texas (filed in 2005 and 2006) and in the District of Delaware (filed in 2006). In total, there are dozens of defendant groups and 175 separate corporate defendants in these various actions, most of whom are large corporations with widespread businesses. Given the number of defendants, their size and their reach, it was not feasible for a single law firm to represent Katz against all of the defendants. Instead, Katz has two primary outside law firms handling these matters: (1) Cooley Godward Kronish LLP is counsel in all of the Texas cases; and (2) Heller Ehrman LLP is counsel in all of the Delaware cases. While jurisdiction and venue were the primary factors considered in selecting the two venues, ethical conflicts were also considered in dividing the defendants and filing in separate venues.¹

A. The Katz Patent Actions in the E.D. Texas

Katz owns a portfolio of interactive call processing patents which are directed to the integration of telephone systems with computer databases and live operator call centers to provide interactive call processing services, which are sometimes referred to as interactive voice response, or "IVR", systems. Katz has licensed its patents to over 150 companies and filed several patent infringement cases, all resolved prior to trial, including the *AT&T* and *Verizon* cases cited in Target's motion. There is also an extensive record of proceedings on the Katz patents before the United States Patent and Trademark Office ("USPTO"). In 2005 and again in 2006, Katz filed additional cases in the E.D. Texas and in the District of Delaware, as follows:

1. RAKTL v. Citibank et al., Civ. Action No. 5:05-CV-142-DF

In July 2005, Katz filed in the E.D. Texas, Texarkana Division, against defendants in three different industries, namely Citibank entities, Discover entities, T-Mobile entities and Wal-Mart entities (collectively the "*Citibank Defendants*"). The *Citibank* case was assigned to the

¹ While it would be possible to manage the conflict issues if the cases are consolidated, proper management of those ethical issues would be facilitated by allowing the cases to proceed in separate courts. We are aware of no prior published motion or proceeding before the JPML raises this type of conflict issue, it should be an appropriate factor for consideration and one that militates against consolidation of these cases.

Honorable David Folsom.² The *Citibank* case alleges infringement of 22 patents and is far advanced toward its May 8, 2007 trial date. In accordance with the Local Patent Rules implemented in E.D. Texas, on December 15, 2005, Katz served its preliminary infringement contentions. Each defendant then served its invalidity contentions, alleging indefiniteness, anticipation and obviousness and seeking to invalidate each of the claims asserted by Katz.³

In connection with the court's January 2006 Scheduling Conference, Judge Folsom gave considerable thought to managing a case involving the infringement of hundreds of claims in 22 patents, by scores of infringing systems, operated by different defendant groups in different industries, and took early steps to streamline the case. *See, e.g.*, Ex. 3, Joint Conference Report at 3, 8, 9, and Ex. 4, Defendants' Report in Response to Court's May 24, 2006 Order at 7-8. Judge Folsom set an aggressive schedule and has held the parties to it. Ex. 5, May 8, 2006 Amended Docket Control Order. Judge Folsom also identified and appointed a technical advisor, Mr. Gale R. Peterson, to advise the court on technology issues, and the court has now overseen all aspects of the *Citibank* case for more than 15 months, including all claim construction and discovery issues.

a. Judge Folsom's Management of the Number of Asserted Claims and Severance of the *Discover* Action

After extensive briefing in May and June 2006 Judge Folsom ordered that the parties would litigate representative claims from among the hundreds at issue in the case. At Judge Folsom's direction, Katz selected 18 representative claims from 16 different patents.⁴

b. Discovery and Other Pretrial Matters

Discovery in the *Citibank* case has progressed for almost a year. The parties have

² The facts concerning the *Citibank* case are supported by the Declaration of Nathan C. Cummings, Ex. 1, filed and served herewith ("Cummings Decl.").

³ In the course of these filings, the *Citibank* entities took a license to the Katz patents and were dismissed, leaving the *Discover*, T-Mobile and Wal-Mart entities as defendants.

⁴ On August 16, 2006 Judge Folsom issued a further order to preserve Katz's due process rights to assert additional patents infringed by the *Citibank* Defendants, severing the remaining patents into a separate action, which is stayed pending resolution of the current action. *See* Ex. 6, August 16, 2006 Order Severing Certain of Plaintiff's Claims and Defendants' Defenses and Counterclaims & Staying the Severed Action.

collectively produced over two million pages of documents and the defendants' document productions are ongoing. The parties have served, answered and supplemented their interrogatories and Katz has served Rule 34 notices to inspect defendants' call center premises and Rule 30(b)(6) deposition notices on various topics and recently took the depositions of T-Mobile, Wal-Mart and Discover employees. Judge Folsom has heard and decided a number of discovery issues throughout the case and currently has a number of issues under consideration.

c. The September 19-20, 2006 *Markman* and Tutorial Hearing

On September 19-20, 2006 Judge Folsom and his technical advisor held the court's *Markman*⁵ hearing and a technical tutorial presented by the parties. The court presently has those *Markman* issues under submission and the parties are awaiting the court's order. Defendants originally identified over 1600 terms for construction, and ultimately briefed about 40 terms, with one defendant, T-Mobile, briefing approximately 20 additional claim terms, and Katz briefing about 60 claim terms.⁶ The claim construction briefing took place between July through September 2006 and included 160 pages of detailed explanations of the IVR and call center services and technology to support the parties' claim term contentions.

Once the court issues its *Markman* order, a series of events and deadlines will be set in motion under the court's local rules that will put the *Citibank* case on the fast-track to trial.⁷ Consolidation and transfer would disrupt this case at a critical juncture, impose significant delay, and potentially waste substantial work product.

2. Recent Additional Patent Actions in the E.D. Texas

On August 21, 2006, Katz filed five new actions in the E.D. Texas, in different divisions to avoid overburdening any one judge, naming defendants who were selected and organized

⁵ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370; 116 S.Ct. 1384 (1996).

⁶ T-Mobile's addition of proposed terms reflects that differences in accused systems among defendants produce additional terms for construction, raising the potential for a very large number of claims for construction in a proceeding with 175 defendants.

⁷ For example, fact discovery closes 80 days after the order and the close of expert discovery is 60 days thereafter. Accordingly, the *Citibank* parties will be actively engaged in final fact and expert discovery, as well as in dispositive motion briefing over the next three to six months, all culminating in trial starting on May 8, 2007. Ex. 5, Amended Docket Control Order.

largely according to industries and/or use of similar accused systems.⁸ This grouping was designed to achieve case specific efficiencies, including allowing the selection of representative claims that are common to a discrete set of defendants.

a. RAKTL v. American Electric Power, et al.; RAKTL v. American Airlines, et al.

Two of the actions are pending before Judge Folsom: *Ronald A. Katz Tech. Licensing, L.P. v. American Electric Power Company, Inc.*, No. 5:06-CV-188 (E.D. Tex.) (Texarkana Division); and *Ronald A. Katz Tech. Licensing, L.P. v. American Airlines*, No. 2:06-CV-334 (E.D. Tex.) (Marshall Division). Including the severed *Discover* action, Judge Folsom presides over four of the Katz actions in the E.D. Texas. The *American Electric* action asserts 20 patents against 9 defendants in the energy/utility industries. All defendants have answered and counterclaimed and the Magistrate has set the Rule 26(f) conference for December 12, 2006. Ex. 7, Docket. The *American Airlines* action asserts 20 patents against 12 defendants in the travel and hospitality industry. All defendants but one have answered and counterclaimed. Ex. 8, Docket.

b. RAKTL v. Aetna

On August 21, 2006, Katz filed the *Ronald A. Katz Tech. Licensing, L.P. v. Aetna, Inc.*, No. 2:06-CV-335 (E.D. Tex.) (Marshall Division) case against defendants who provide automated prescription refills. This case was assigned to Judge Ward and asserts 19 patents against 15 defendants. All defendants but one have answered and counterclaimed. Ex. 9, Docket.

c. RAKTL v. Alltel; RAKTL v. Chevron

On August 21, 2006, Katz filed two actions in the Lufkin Division of the E.D. Texas: *Ronald A. Katz Tech. Licensing, L.P. v. Chevron Corp., et al.*, No. 9:06-CV-178 (E.D. Tex.) (Lufkin Division); and *Ronald A. Katz Tech. Licensing, L.P. v. Alltel Corp., et al.*, No. 9:06-CV-

⁸ Katz filed a sixth action, *RAKTL v. Genesys Conferencing, Inc.*, E.D. Tex. Case No. 5:06-CV-187; Target appropriately excluded the *Genesys* Case from its Motion because different patents are asserted in that case.

177 (E.D. Tex.) (Lufkin Division). The *Chevron* case focuses primarily on defendants in the financial services area, while the *Alltel* case focuses on defendants in the communications industry. The cases were assigned to Judge Clark who, on September 7, 2006, *sua sponte* divided them into fifteen separate actions "to promote efficiency and administrative ease" for the Court. See Target Ex. 13, *Chevron* Order, and Target Ex. 12, *Alltel* Order. Judge Clark has indicated that he will jointly administer these cases "to promote efficient use of judicial and party resources." *Id.* All defendants in the *Chevron* case have answered and counterclaimed. All defendants but three in the *Alltel* case have answered and counterclaimed. Exs. 10 to 24, Dockets.

B. The Katz Patent Actions in the District of Delaware

On September 1, 2006, Katz, through the Heller Erhman LLP firm for the aforementioned conflict of interest purposes, filed an additional five cases in the District of Delaware against defendants with a jurisdictional nexus to that venue. These actions are all pending in the Wilmington Division before Judge Gregory Sleet, who is an experienced jurist well able to manage large patent litigation cases with multiple parties. In four of the actions, all defendants have already answered and counterclaimed. In the fifth action, Katz filed a first amended complaint on October 25, 2006. Exs. 25 to 29, Dockets. Katz understands that a significant majority of the Delaware defendants oppose Target's motion for consolidation and desire to remain in Delaware.

III. CONSOLIDATION IS NOT APPROPRIATE FOR THESE CASES AND WOULD FRUSTRATE THE CONVENIENCE OF THE PARTIES AND JUDICIAL EFFICIENCY

To grant a motion for transfer and consolidation the Panel must find that (a) the actions involve common issues of fact, (b) transfer would be for the convenience of the parties and witnesses, and (c) transfer would promote the just and efficient conduct of the actions. 28 U.S.C. § 1407. Transfer and consolidation are, however, not automatic even where multiple actions raise some similar issues. *In re Truck Accident Near Alamogordo*, 387 F. Supp. 732, 733 (J.P.M.L. 1975) ("the existence of common, if not identical, common questions of fact ... is not

sufficient, by itself to warrant transfer"). The crucial question on this motion is whether Target has shown that, even notwithstanding some overlap in questions of fact, the economies of transfer outweigh the resulting inconvenience to the parties. *In re "East of the Rockies" Concrete Pipe*, 302 F. Supp. 244, 253 (J.P.M.L. 1969).

Target fails to show that common questions of fact are sufficiently numerous, complex or unresolved to justify consolidation and Target does not explain how common issues of patent validity and enforceability will predominate, given that unique issues of fact about infringement and damages will exist for each of the 175 defendants. Target also fails to show that consolidation and transfer would be more convenient or produce efficiencies for the parties and witnesses. Finally, Target also fails to address the willingness of the non-movant parties to cooperate and coordinate in discovery and case management, as well as the disruption and delay certain to follow any consolidation of cases with 175 defendants in an already burdened and geographically inconvenient forum.

A. The Issues are Not Sufficiently Numerous, Complex, or Unresolved to Justify Consolidation and Transfer

The moving party has the burden of demonstrating that common factual questions are sufficiently complex, or that the associated discovery is so time consuming, that transfer is justified. 28 U.S.C. § 1407; *In re Eli Lilly & Co. (Cephalexin Monohydrate) Patent Litig.*, 446 F. Supp. 242, 243-44 (J.P.M.L. 1978). If movant fails to carry its burden, consolidation and transfer should be denied, even for a large number of actions in several districts. *See In re Dupont Benelate Settlement Agreement Litig.*, No. 1340, 2000 U.S. Dist. Lexis 7378 (J.P.M.L. 2000).

1. Proof of Patent Infringement Presents Unique Fact Questions for Each Defendant

As a matter of law, proof of patent infringement is distinct as to each defendant and its technology. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 374; 116 S.Ct. 1384, 1388, (1996) ("Victory in an infringement suit requires a finding that the patent claim 'covers the

alleged infringer's product or process'..."); *Southwall Technologies, Inc. v. Cardinal I G Co.*, 54 F.3d 1570, 1575 (Fed. Cir. 1995) (proof of infringement is a question of fact and requires establishing that every limitation of a claim is found in an accused product or method). Here, each defendant operates different customized systems and processes and, accordingly, there will be few if any common factual questions about the 175 defendants' infringement.⁹ The challenge would be greatly exaggerated in a consolidated case with 175 defendants, in different industries, employing different IVR systems and methods, all or many of which implicate infringement of different patent claims.

2. Proof of Patent Infringement Damages Presents Unique Fact Questions for Each Defendant

Target asserts that the reasonable royalty factors used in calculating patent damages under *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) will present common fact questions among the actions. In fact, of the 15 *Georgia Pacific* factors considered when assessing a patent "reasonable royalty" measure of damages, nine factors involve facts particular to each separate defendant. Only six focus on the plaintiff or the general industry.¹⁰ Thus, the focus of damages discovery and analyses will be far

⁹ Target concedes that "... there will be differences in the telephone services of the defendants involved in the various actions ..." (Mot. at 12.), thus recognizing that different systems will necessarily require different discovery and proof of infringement. Target glosses over this issue by citing cases where the Panel found that overlapping patents in several actions could be expected to present common fact questions, including *In re Acacia Media Techs. Corp. Patent Litig.*, 360 F. Supp. 2d 1377, 1379 (J.P.M.L. 2005); *In re Pharmastem Therapeutics, Inc. Patent Litig.*, 360 F. Supp. 2d 1362, 1364 (J.P.M.L. 2005); and *In re MLR, LLC, Patent Litig.* 269 F. Supp. 2d 1380 (J.P.M.L. 2003). These cases are distinguishable, however. In *Acacia*, there were only 64 defendants, the majority of whom were in the same industry and all parties agreed to, or did not contest, consolidation. *Acacia*, 360 F. Supp. 2d at 1378. Similarly, in *Pharmastem*, there were only 31 defendants, all of whom were in the same industry, and only three parties opposed transfer and consolidation. *Pharmastem*, 360 F. Supp. 2d at 1363. In *MLR*, there were only 11 defendants, all in the same industry, and only two parties opposed the MDL motion. *MLR*, 269 F. Supp. 2d at 1380. In contrast, the present case involves 175 defendants in different industries, a substantial number of whom oppose consolidation.

¹⁰ The nine defendant-specific factors include: (1) the rates paid by the defendant for use of comparable patents; (2) the territory and customers of the licensee for the licensed technology; (3) the effect of using the patented specialty in promoting sales of the licensee's other goods or services; (4) the licensee's commercial success with the patented technology; (5) the extent of the licensee's infringing use of the patented technology; (6) the portion of licensee's profit attributable to use of the patented technology; (7) the opinion testimony of qualified experts retained by each

more heavily directed to each defendant's discrete infringement and the value that each defendant derived from its use of the patented inventions.

3. Patent Validity and Enforceability Have Been Previously and Thoroughly Discovered and Litigated

Target asserts that issues of validity,¹¹ enforceability and prosecution history estoppel¹² will be common among the cases due to the overlapping patents at issue. On the facts of these cases, however, consolidation is not likely to produce significant efficiencies. During prior litigations over the Katz patents, defendants have raised numerous affirmative defenses, most of which overlap with the current defendants' contentions. Defendants in the prior cases identified and filed voluminous information on the prior art and all of that prior case material is readily available to Target and the other defendants and can be shared. There is likewise an extensive public record of proceedings on the Katz patents before the USPTO and given this extensive history and publicly available collections of documents, it is unlikely that validity or unenforceability issues will produce significant additional discovery or fact issues.

4. The Risk of Inconsistent Rulings on Claim Construction or Other Issues Does Not Warrant Consolidation

Target incorrectly argues that risk of inconsistent pretrial rulings on the issue of patent claim construction justifies transfer and consolidation, but as Target admits, "it is the obligation of each district court to construe the claims of a patent as a matter of law." (Mot. at 15); *see also, Markman, supra.*, 517 U.S. at 388-391. Claim construction is a pretrial issue of law

licensee; (8) the nature and scope of the license; and (9) the amount the prudent licensee would have been willing to pay for a license in an arm's length negotiation. *Georgia-Pacific Corp., supra.*

¹¹ Validity is primarily a matter of prior art and expert opinion. *Union Oil Co. of California v. Atlanta Richfield Co.*, 208 F.3d 989, 994-95 (Fed. Cir. 2000), cert. denied, 531 U.S. 1183 (2001) (Proving a patent invalid under 35 U.S.C. § 102 requires showing that allegedly invalidating prior art contains each and every element of a claim); *Kolko Mfg. Co Ltd. v. Turn-Key-Tech LLC*, 381 F.3d 1142, 1152 (Fed. Cir. 2004) ("typically, testimony concerning anticipation must be testimony from one skilled in the art....").

¹² Unenforceability and the application of prosecution history estoppel concern prior art and the record of prosecution of the patent before the USPTO. *See FMC Corp v. Manitowoc Co., Inc.* 835 F.2d 1411, 1415 (Fed. Cir. 1987) (establishing unenforceability through inequitable conduct requires clear and convincing proof of knowing failure to disclose material information, such as prior art, to the PTO in prosecution of the patent.) *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co, Ltd.*, 535 U.S. 722, 735 (2002) ("[Prosecution history] estoppel has been discussed most often in the context of amendments made to avoid the prior art.").

reserved by the U.S. Supreme Court to each district court. *Id.* An issue of law, of course, is not an appropriate basis for MDL consolidation. *In re U.S. Navy Variable Reenlistment Bonus Litig.*, 407 F. Supp. 1405, 1406-07 (J.P.M.L. 1976) (transfer of actions for consolidated pretrial proceedings is unwarranted where common questions of law, rather than fact, predominate). Thus, while each defendant will have an opportunity to litigate the claim construction issues it believes are critical to its case, it is likely that the number of claim terms necessary to be construed will be reduced as a result of these prior rulings, including the expected ruling in the *Citibank* case.

Likewise, the May 8, 2007 trial in the *Citibank* case is fast-approaching. Resolution of issues in *Citibank* case may thus obviate or reduce the need for further litigation and allowing the *Citibank* case to proceed to trial will conserve judicial resources and reduce expense and inconvenience to the litigants.

B. Consolidation and Transfer Would Not Promote Convenience and Judicial Economy

1. Many of the Parties Do Not Support Consolidation and Transfer

To date, many of the 175 defendants have expressed the intention to oppose Target's motion. Consolidation and transfer has been denied where not all parties in the relevant actions support it. *In re Accuscan, Inc., Automatic Background Contrast Control Patent Litig.*, No. 1145, 1996 U.S. Dist. LEXIS 17696 (J.P.M.L. Nov. 26, 1996). The parties are best situated to evaluate the benefits and disadvantages of transfer and consolidation and the significant opposition here speaks volumes about the parties' evaluations that the current separate cases presents the most convenient and efficient means of managing and resolving these cases.

2. The E.D. Texas and the District of Delaware Chose Not to Consolidate the Katz Actions Pending In Those Districts.

Districts have the discretion to *sua sponte* consolidate pending actions if they believe that consolidation would promote convenience, efficiency and administrative ease. *See* F.R.C.P. 42(a); *Devlin v. Transportation Communications Int'l Union*, 175 F.3d 121, 130 (2nd Cir. 1999).

To date, neither the E.D. of Texas or the District Court of Delaware has chosen to consolidate the Katz actions within their districts, and at least Judge Clark in the E.D. Texas *severed* the cases pending in his court to promote efficiency and administrative ease, while acknowledging that he will manage the cases in a coordinated fashion.¹³

3. Alternative Methods Are Available to Achieve Efficiencies That Do Not Entail the Burdens and Delay Inherent in Consolidation

Where there are alternative methods to prevent duplicative discovery and inconsistent pretrial rulings, consolidation is not warranted. *In re Commonwealth Sci. & Indus. Research Org. Patent Litig.*, 395 F.Supp. 2d 1357-58 (J.P.M.L. 2005). This is especially true when the parties have displayed past willingness to coordinate their discovery efforts. *In re Cable Tie Patent Litig.*, 487 F. Supp. 1351, 1353 (J.P.M.L. 1980). That cooperation exists here, where many parties are considering proposed stipulations to avoid duplicative discovery and to coordinate case management across all cases. It is the goal that the stipulations will encompass at least the following:

- coordinated document production by Katz with a protocol to be developed for common Bates numbering;
- coordinated deposition discovery on common issues to avoid duplicative examination of witnesses;
- coordinated third-party subpoena practice with respect to licensees, prior art witnesses and vendors;
- adoption of protective orders with common terms;
- admissibility of third-party discovery, including licensees, prior art witnesses and vendors.

The parties also have the mutual goal to work towards coordinated protocols or stipulations regarding *Markman* briefing and case management including:

- streamlining the claim selection process;

¹³ The five cases in Delaware were all assigned to Judge Gregory Sleet and are pending separately as independent cases. Exs. 25 to 29, Dockets.

- agreeing to sequential patent disclosures and other features of a set of acceptable local court patent rules addressing claim construction and case management, subject to court approval;
- coordinating claim construction briefing schedules to the extent possible and avoiding duplication of effort on common construction issues;
- agreeing to the appointment of a technical advisor for the courts.

The parties intend to further explore and develop a consolidated and/or coordinated summary judgment procedure on common issues to the extent possible to avoid duplication of effort. It is contemplated that a steering committee made up of representatives of both sides of the actions in the E.D. Texas and the District of Delaware will be selected to finalize the details of these coordination activities for the pretrial proceedings in all cases.

IV. IF THE PANEL BELIEVES CONSOLIDATION IS JUSTIFIED, THE CITIBANK CASE SHOULD BE EXCLUDED FROM THE CONSOLIDATION AND TRANSFER ORDER.

The Panel should exclude the *Citibank* case from any multidistrict litigation order because of its advanced state. It appears that no party to the *Citibank* case has joined Target's motion. The anticipated *Markman* ruling from Judge Folsom will likely inform all parties about the merits of their cases and pave the way for summary judgment and/or trial or, as many defendants in other cases have chosen, settlement. Such considerations are precisely why the Panel recognizes that advanced actions are inappropriate for consolidation with recently filed cases. *In re Nifedipine Capsule Patent Litig.*, No. 774, 1988 U.S. Dist. LEXIS 17025, at *2 (J.P.M.L. Oct. 13, 1988) (excluding from transfer one action which was nearing close of discovery on the basis that it was distinct from more recently filed actions).

V. IF CONSOLIDATION IS ORDERED THE E.D. TEXAS SHOULD BE THE TRANSFEREE COURT

If the Panel concludes that consolidation and transfer are appropriate, it should transfer the cases to Judge Folsom in the E.D. of Texas.

A. The E.D. Texas Has the Greatest Number of Pending Katz Actions

Target's proposal to transfer all of the Katz cases to a district that is already overburdened, where no action is pending and where the cases have no substantial nexus, is disfavored and without basis.¹⁴ The Panel regularly transfers actions to the District Court having the *greatest* number of relevant pending actions. *See, e.g., In re Fosamax Prods. Liab. Litig.*, 444 F. Supp. 2d 1347, 1349-50 (J.P.M.L. 2006). The Panel has traditionally been reluctant to send consolidated cases to a district where *no* actions are pending. *In re Mailblocks, Inc.*, 279 F. Supp. 2d 1379, 1381 (J.P.M.L. 2003). As of September 30, 2006, there were 280 pending multidistrict litigations, and only thirteen of these were transferred to a district where no actions were pending. Hsieh Decl. ¶ 3; Ex. 30, Statistical Analysis of Multidistrict Litigation 2006. In 2005, only nine out of 259 pending multidistrict litigations were transferred to a district where no actions were pending. Hsieh Decl. ¶ 3; Ex. 31, Statistical Analysis of Multidistrict Litigation 2005. In those rare instances of transfer to a district where no action was pending, the Panel has acknowledged that its selection of that transferee court was the exception, and that its decision to do so was premised on the strong factual nexus between the action and the forum. *See, e.g., In re Sundstrand Data Control, Inc. Patent Litig.*, 443 F. Supp. 1019, 1020 (J.P.M.L. 1978).

When Judge Clark's severance of the *Alltel* and *Chevron* cases is taken into account, there are 20 Katz cases pending in the E.D. Texas, five pending in the District of Delaware, and *none* pending in the C.D. California.¹⁵ Transfer to the district where the most actions are pending requires the fewest parties to be displaced. The C.D. California should be excluded from consideration because there are no currently pending actions in that district and because, as discussed below, transfer there would significantly inconvenience all parties. Such a transfer would further impose an undesired burden on one of the busiest District Courts in the country—and on the particular judge requested—and would squander the substantial judicial resources

¹⁴ Other than *In re Sundstrand Data Control, Inc. Patent Litig.*, 443 F. Supp. 1019, 1020 (J.P.M.L. 1978), Target cites no authority supporting its proposal. Although in *Sunstrand* the Panel did transfer actions to a district with no action pending, it did so because of the substantial nexus between the Western District of Washington and the common fact questions. *Id.* at 1021. Further, the Panel noted that none of the actions were significantly further advanced than the others.

¹⁵ Even if Judge Clark's severance orders were not considered there are seven cases pending in the E.D. of Texas.

invested by Judge Folsom and his court in the *Citibank* case.

B. The E.D. Texas is the Forum With the Most Recent Knowledge and Experience with the Legal and Factual Issues

The E.D. Texas has the most current judicial knowledge and experience with the Katz patents. The Panel has often transferred consolidated patent cases to the court having the greatest technological and legal familiarity with the issues involved. *In re Pharmastem Therapeutics, Inc. Patent Litig.*, 360 F. Supp. 2d 1362, 1364 (J.P.M.L. 2005).

Judge Folsom, his clerks, and particularly his technical advisor, have developed the most current detailed knowledge about the Katz patents and the parties' infringement and invalidity contentions as a result of the activities in the *Citibank* and *Discover* cases. Judge Folsom already has experience with twenty-two of twenty-seven patents alleged in all the cases.

In contrast, Judge Klausner's knowledge in the C.D. California is nearly three years old and he only construed claims from 10 of the Katz patents, compared to the 16 patents that Judge Folsom is currently construing in the *Citibank* case. Given Judge Folsom's recent and detailed knowledge of the Katz Actions, and given that he has four Katz Actions before him, the E.D. Texas would be the most logical choice of transferee districts.

C. The E.D. Texas is the Most Convenient and Efficient Venue

The location of the parties, witnesses, and evidence are important factors in choosing a transferee court. *In re Columbia University Patent Litig.*, 313 F. Supp. 2d 1383 (J.P.M.L. 2004). In most instances, and particularly in these cases, if consolidation is ordered, a geographically central location best serves the convenience of the parties. *In re Papst Licensing, GmbH Patent Litig.*, No. 1298, 1999 U.S. Dist. LEXIS 15871 (J.P.M.L. Oct. 12, 1999).

Texas is the most central forum for the greatest number of defendants. Seventeen defendants reside in Texas, which is more than in any other state; 90 are located in the South and Midwest, and 56 are in the East. By comparison, only 29 of 175 defendants reside in the Western United States. 84% of defendants are closer to Texas than to California. See Hsieh Decl. ¶ 2; Ex. 32, Location of Defendants by Region and by Suit.

Further, the E.D. Texas has established a substantial infrastructure to host, house, and manage complex patent litigation. It has suitable hotels, restaurants, office space and amenities for the parties and their counsel and is accessible within a few hours from all corners of the country. Indeed, it has managed some of the highest profile and most complex patent litigation matters recently litigated, including: *Echostar Technologies v. TiVo, Inc., et al.*; *Broadcom Corp. v. Intel Corp.*; and *Ericsson, Inc. v. Qualcomm, Inc.*¹⁶

Target places undue emphasis on Katz's presence in Los Angeles and the possibility that some third party witnesses may be located there. However, the physical location of Katz's documents is irrelevant because they are digitized and ready for production anywhere in the country. Further, the possible presence in Los Angeles of a small number of third-party witnesses, many of whom are unidentified by Target, is substantially outweighed by the inconvenience transfer would impose on the parties to these cases.¹⁷

The E.D. Texas is also one of the plaintiff's selected venues and is the first-filed venue. The Panel has recognized the merit in transferring a consolidated patent case to the district with the first-filed case. *In re Mosaid Techs., Inc. Patent Litig.*, 283 F. Supp. 2d 1359, 1361 (J.P.M.L. 2003).

D. The E.D. Texas is One of the Most Experienced Patent Litigation Trial Courts in the Country and Has Implemented Patent Litigation Rules to Streamline Patent Cases

The E.D. Texas regularly presides over some of the most sophisticated and high-stakes patent matters in the nation. Judge Folsom alone has handled 110 patent cases over his career, and is well versed in patent law and procedures.¹⁸ Hsieh Decl. ¶ 4; Ex. 33, excerpt from LegalMetric Initial Judge Report of Judge Folsom Patent Cases.

¹⁶ In fact, Judge Folsom presided over all these cases. A list of the 110 patent litigation matters Judge Folsom has handled is attached as Ex. 33; see Hsieh Decl. ¶ 4.

¹⁷ To the extent these witnesses include the Katz patent prosecutors, they have been deposed in prior litigations and the transcripts of their testimony are available to Target.

¹⁸ Judge Klausner in the C.D. California has handled less than half as many patent cases as Judge Folsom. Ex. 34, excerpt from LegalMetric Initial Judge Report of Judge Klausner Patent Cases.

The E.D. Texas has implemented specific patent litigation rules designed to streamline and aid in the management of patent cases.¹⁹ Ex. 35, E.D. Texas Local Patent Rules, Appendix M. Cases expeditiously reach resolution or trial in the E.D. Texas, faster than in other districts. The median time to trial in the E.D. Texas is just 15.9 months, compared to 20.5 months in the C.D. California. *See* Hsieh Decl. ¶ 36; Exs. 36 to 38, Judicial Caseload Profile Statistics of the Administrative Office of the U.S. District Court.

E. A Comparison of Dockets Favors the E.D. Texas

The E.D. Texas is more capable of absorbing a consolidated case of the magnitude proposed than the C.D. California. The Panel ordinarily looks to the caseloads of the possible transferee districts to select the district with the most available resources. *Papst Licensing, supra*, 1999 U.S. Dist. LEXIS at *5-6. The Panel usually transfers consolidated actions to districts which have been “less burdened by the Panel with multidistrict dockets” than the other transferee fora. *In re Gemstar Dev. Corp. Patent Litig.*, No. 1274, 1999 U.S. Dist. LEXIS 5905, at *4 (J.P.M.L. Apr. 26, 1999).

The E.D. Texas has only 379 pending cases per judge. The judges in the C.D. California are much busier, with 471 cases and thus the C.D. California case loads are nearly 25% heavier than that of the E.D. Texas. The lighter docket and specialized patent rules likely explain why cases resolve more quickly in the E.D. Texas.²⁰ In 2005, only 2.6% of cases in the E.D. Texas were over three years old, compared to 7.1% of cases in the C.D. California. Exs. 37 to 38, Judicial Caseload Profile Statistics of The Administrative Office of the U.S. Courts. The E.D. Texas also has a superior “weighted filings” metric compared the C.D. California (511 versus 575), meaning that each judge in the E.D. Texas manages fewer complex litigation matters than do the judges in the C.D. California. The E.D. Texas has more available resources to devote to a patent action of this magnitude and, as such, is a far superior choice of forum to efficiently and effectively manage these cases.

¹⁹ Notably, the C.D. California has no such patent case specific rules.

²⁰ The C.D. California has a faster median time to civil disposition, which likely reflects far more Americans with Disabilities Act of 1990 (ADA) and other relatively simple civil cases associated with a much larger urban area.

VI. THE DISTRICT OF DELAWARE WOULD ALSO BE AN APPROPRIATE TRANSFEREE COURT IF THE PANEL ELECTS TO CONSOLIDATE THE TEXAS AND DELAWARE CASES.

The District of Delaware also would be a sound choice for the transferee court, as compared to the C.D. California. The District of Delaware's 116 case annual case load per judge is significantly less than the 185 cases per judge for judges in the Central District of California.²¹ However, the Delaware judges handle a larger number of patent cases. Based upon PACER records for the five-year period ending September 30, 2006, there were 642 patent cases filed in the District of Delaware, which on average was 32 per year for each judge as compared to approximately 11 a year for judges in the C.D. California. Judge Sleet, who has been assigned the five related Delaware cases, has considerable experience with patent cases. In fact, the J.P.M.L. assigned a consolidated patent litigation to Judge Sleet just last year. *See In re Pharmastem Therapeutics, Inc., Patent Litigation*, 360 F. Supp. 2d 1362 (J.P.M.L. 2005). The District of Delaware also regularly assigns patent cases to a very experienced magistrate judge for mediation, who has mediated hundreds of patent cases.²²

VII. CONCLUSION

Target's motion should be denied because it fails to demonstrate that any purported efficiencies to be gained by consolidation and transfer outweigh the inconvenience to the parties, witnesses, and the Courts. In fact, there would be few, if any, efficiencies and the burdens to the parties would substantially outweigh those efficiencies. Fact issues, like patent infringement and damages, are unique to each defendant and the legal patent claim construction issues are irrelevant to the MDL decision. Moreover, it would be substantially more complex for one court to manage these disparate cases, as evidenced by the current Judges' decisions to keep the actions separate and in several instances to further divide the cases.

²¹ This is based upon the three-year period ending September 30, 2005 as reported by Administrative Office of the U.S. Courts, with the data available at www.uscourts.gov at [judbus2005/appendices/x1a.pdf](#), [judbus2004/appendices/x1a.pdf](#), and [judbus2003/appendices/x1a.pdf](#).

²² In addition, the District of Delaware would be more convenient than the C.D. of California for the parties and witnesses. Almost half of the 175 individual defendants are within 500 miles of the District of Delaware's Wilmington courthouse; in contrast, there are only 16 defendants located in California.

Should the Panel decide consolidation is warranted, it should exclude the *Citibank* case from any consolidation. That case is in the advanced stages of pretrial preparation and any orders derailing it now would unduly burden the parties with needless delay and expense, would be wasteful of the parties' and judicial resources, and would eliminate an effective case management tool for the remaining cases.

Finally, should the Panel decide that transfer and consolidation is warranted, transfer to the E.D. Texas is most logical because it: (i) has the greatest number of pending Katz Actions; (ii) has the most recent knowledge and experience with the legal and factual issues; (iii) is the most convenient and efficient venue for the largest number of parties; (iv) is one of the most experienced patent litigation trial courts in the country and has implemented patent litigation rules to streamline cases; (v) and has more docket capacity and ability to absorb these cases than the C.D. California.

Dated: November 3, 2006

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BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re:

MDL Docket No. 1816

**Katz Interactive Call Processing Patent
Litigation**

**APPENDIX OF THE TABLE OF AUTHORITIES OF PLAINTIFF'S OPPOSITION TO
TARGET'S MOTION FOR TRANSFER AND CONSOLIDATION
OF KATZ TECHNOLOGY LICENSING PATENT LITIGATION**

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TABLE OF AUTHORITIES

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<i>In re Nifedipine Capsule Patent Litig., No.</i> No. 774, 1988 U.S. Dist. LEXIS 17025 (J.P.M.L. Oct. 13, 1988)	13

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<i>In re Sundstrand Data Control, Inc. Patent Litig.,</i> 443 F. Supp. 1019 (J.P.M.L. 1978).....	14
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STATUTES

28 U.S.C. § 1407	7, 8
F.R.C.P. 42(a)	11

Certificate of Service

I hereby certify that true and correct copies of the following documents:

Plaintiff's Response to Defendants Target's Motion for Transfer and Consolidation of Katz Interactive Call Processing Patent Litigation,

Plaintiff's Memorandum of Law in Opposition of Target's Motion for Transfer and Consolidation of Katz Interactive Call Processing Patent Litigation,

Appendix of the Table of Authorities in Opposition of Target's Motion for Transfer and Consolidation of Katz Interactive Call Processing Patent Litigation, and

Appendix of Exhibits in Opposition of Target's Motion for Transfer and Consolidation of Katz Interactive Call Processing Patent Litigation

were served on all counsel in compliance with Rule 5.2(a) of the Rules of Procedure of the Judicial Panel on Multidistrict Litigation. Ronald A. Katz Technology Licensing L.P.'s Response and Opposition to Defendant Target's Motion for Transfer and Consolidation of Katz Interactive Call Processing Patent Litigation Pursuant to 28 U.S.C. § 1407 were served via U.S. Mail on this 4th of November, 2006 according to the attached Panel Attorney Service List, and supplemented by the attached Service List.



Christine Hsieh

Judicial Panel on Multidistrict Litigation - Panel Attorney Service List

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Docket: 1816 - In re Katz Interactive Call Processing Patent Litigation

Status: Pending on / /

Transferee District: Judge:

Printed on 10/27/2006

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Note: Please refer to the report title page for complete report scope and key.

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(Panel Attorney Service List for MDL 1,816 Continued)

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Exhibit D

Court's resources, to promote consistent claim construction on the same patents, and to ensure fairness to Target in the claim construction process.

II. BACKGROUND

A. The Citibank case.

On December 16, 2005, Plaintiff Ronald A. Katz Technology Licensing, L.P. ("Katz") filed the case, *Ronald A. Katz Technology Licensing, L.P. v. Citibank, N.A. et al.*, 5:05-cv-00142-DF (Folsom, J.), against fifteen defendants for patent infringement (the "Citibank case"). Katz has asserted twenty-two patents in the Citibank case. On May 16, 2006, pursuant to a Court Order, Katz designated ten representative claims from those patents. On July 14, 2006, Katz designated an additional eight representative claims. The eighteen representative claims are from sixteen of the twenty-two patents.

B. The Target Case.

On August 21, 2006, Katz filed a related patent infringement action against Target, as well as six other defendants, in this Court.¹ *Ronald A. Katz Technology Licensing, L.P. v. American Electric Power Company, Inc. et al.*, 5:06-cv-00188-DF-CMC (Folsom, J.) (the "Target case"). On that same date, Katz also filed at least four other cases in the Eastern District of Texas on essentially the same patents.² In any event, in the Target case, Katz has asserted twenty patents, every one of which Katz has asserted in the Citibank case.

¹ Katz did not comply with Local Rule CV-42(a), which requires the counsel for the filing party to identify related cases on the civil cover sheet.

² The four cases are: *Katz v. American Airlines, et al.*, No. 2:06cv334 (Folsom); *Katz v. Aetna, et al.*, No. 2:06cv335 (Ward); *Katz v. Alltel Corp., et al.*, No. 9:06cv177 (Clark); *Katz v. Chevron Corp., et al.*, No. 9:06cv178 (Clark). Additionally, on September 1, 2006, Katz filed at least five other cases in the District of Delaware based on essentially the same patents.

C. Commonality.

Currently, a claim construction hearing in the Citibank case is scheduled for September 20, 2006, to construe numerous terms contained in the eighteen representative claims identified by Katz. With the exception of just one claim (claim 14 of the '576 patent), all of the claims currently asserted by Katz in the Citibank case are from the same patents Katz is also asserting in the Target case.

II. ARGUMENT

A. Legal Standards

Rule 42(a) provides that courts may consolidate actions or order joint hearings and may “make such orders concerning proceedings therein as may tend to avoid unnecessary costs or delay.” FED. R. CIV. P. 42(a). Courts have very broad discretion to consolidate under Rule 42. *Capps v. Eggers*, 782 F.2d 1342, 1342 (5th Cir. 1986).

Numerous courts have utilized consolidation with respect to related claim construction proceedings. See *Mannington Mills, Inc. v. Armstrong World Indus., Inc.*, No. 00-876-RRM, 2002 U.S. Dist. LEXIS 18502, at *2 (D. Del. June 6, 2002); *Insight Tech. Inc. v. Surefire, LLC*, Nos. 04-cv-074-JD, 03-cv-253-JD, 2006 U.S. Dist. LEXIS 11762, at *3 (D.N.H. Feb. 28, 2006); *Diomed, Inc. v. Angiodynamics, Inc.*, No. 04-CV-10019-RGS, 2005 U.S. Dist. LEXIS 6189, at *2 (D. Mass. Apr. 12, 2005); *Affymetrix, Inc. v. Hyseq, Inc.*, 132 F. Supp. 2d 1212, 1216 (N.D. Cal. 2001); *Housey Pharms., Inc. v. Astrazeneka UK, Ltd.*, 366 F.3d 1348, 1350 n.1 (D. Del. 2004); *PHT Corp. v. Invivodata, Inc.*, Nos. 04-60 GMS, 04-61 GMS, 04-821 GMS, 2005 U.S. Dist. LEXIS 9577, at *2 (D. Del. May 19, 2005).

B. The Policies of Judicial Economy, Consistency and Fairness Support Consolidation of the Target Case with the Citibank Case for the Purpose of Claim Construction

As shown above, there appears to be a complete, or nearly complete, overlap in the claims to be construed in the Target and Citibank cases. As a result, the Court should consolidate the claim constructions in the two cases.

First, consolidation solely for claim construction would promote judicial economy. Katz has sued dozens of defendants in numerous actions on essentially the same patents. Thus, the cases should proceed in a manner that provides some semblance of efficiency for the Court as well as the defendants. See *PHT Corp. v. Invivodata, Inc.*, Nos. 04-60 GMS, 04-61 GMS, 04-821 GMS, 2005 U.S. Dist. LEXIS 9577, at *2 (D. Del. May 19, 2005) (holding a consolidated *Markman* hearing after the plaintiff filed separate actions for patent infringement). If the Court does not combine the claim constructions, it would need to conduct numerous separate claim construction proceedings in each case with multiple rounds of briefing, *Markman* hearings and claim construction rulings. See *Tex. Instruments, Inc. v. Linear Techs. Corp.*, 182 F. Supp. 2d 580, 590 (E.D. Tex. 2002) (Folsom, J.) (granting motion for *Markman* hearing because “defendants have had no chance to litigate their claims, the application of stare decisis in the form of an adoption of claims construed without Defendants’ participation could cause an injustice of precisely the sort that due process seeks to avoid”); *In re Freeman*, 30 F.3d 1459, 1465 (Fed. Cir. 1994); *Mannington Mills, Inc. v. Armstrong World Indus., Inc.*, No. 00-876-RRM, 2002 U.S. Dist. LEXIS 18502, at *2 (D. Del. June 6, 2002). Thus, it would be far more efficient for the Court to combine the claim construction proceedings. See *Mannington Mills*, 2002 U.S. Dist. LEXIS 18502, at *2 (consolidating claim construction would promote judicial economy and reduce waste of both the court’s and counsel’s time).

Second, combining the claim construction proceedings would help the Court avoid inconsistencies in its claim constructions. Target has obviously not had the opportunity to fully analyze the claim construction issues. But it is clear that there are numerous claim construction issues that require evidence and argument in addition to what has been presented in the Citibank case. As just one example, with respect to the term “qualifying” based on “key numbers” and/or “limits on use” or “limited use” (‘863, ‘120, and ‘252 patents) the Citibank defendants argue that such language should require qualifying based upon a “pre-determined amount of uses” and/or a “one time use.” (See Pl. brief in the *Citibank* case at 20, 22 [Docket # 177]; Def. response at 50-51, 57, 59) [Docket # 201]). Yet, the prosecution history of the related U.S. patent 5,561,707 patent includes disclaimers that suggest further restrictions on this language. Target expects that further claim construction analysis of the asserted patents will reveal numerous additional claim terms regarding which the Citibank defendants positions will not adequately represent Target’s positions.

While Target is not prepared to offer any claim constructions at the present time—a few weeks after being sued—it does anticipate being in the position at a later date to offer information to the Court that it believes the Court should consider in reaching the correct claim constructions. Because claim construction is an issue of law,³ if the Court were to issue a claim construction on less than full argument and evidence, it would face a very real risk of troublesome claim construction inconsistencies. For example, if the Court were to go forward with the claim construction in the Citibank case, and later determine that one or more of the terms at issue should be construed differently, it could be faced with serious procedural and substantive problems in the Citibank case, as well as any other case that had proceeded on the

³ *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995).

previous claim constructions. This could affect discovery, expert reports, summary judgment briefing, rulings, and other issues. The only way to avoid these potential inconsistencies is to combine the claim construction proceedings.

Finally, the Court should combine the claim construction proceedings in order to ensure fairness to Target and the other similarly situated defendants. Target has no insights on how or why Katz decided whom to sue, when to sue them, or in what courts it would bring this latest wave of litigation. Nor did Target choose to be sued by Katz on the eve of a claim construction on the same patents in another case in the same Court. But now that Katz has sued Target, Target should have the opportunity to participate in the claim construction process concerning the very patents on which Katz has sued Target. Target respectfully submits that it should be allowed to participate in the original claim construction process as opposed to being forced to challenge an existing claim construction.

IV. CONCLUSION

Given the policies of conserving judicial resources, eliminating the possibility of inconsistency in claim constructions, and providing judicial fairness, Target respectfully requests that the Court grant its Motion to Consolidate Solely For The Purpose Of Claim Construction. Target is also filing herewith an emergency motion to continue the claim construction hearing in the Citibank case in order to give Target the opportunity to prepare its proposed claim constructions and participate.

Dated: September 18, 2006.

Respectfully submitted,

McKOOL SMITH, P.C.

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Certificate of Service

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). As such, this document was served on all counsel who have consented to electronic service. Local Rule CV-5(a)(3)(A). Pursuant to FED. R. CIV. P. 5(d) and Local Rule CV-5(e), all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by U.S. mail, on this the 18th day of September, 2006.

/s/ Sam Baxter
Sam Baxter

CERTIFICATE OF CONFERENCE

Counsel for Target has attempted to confer with all counsel of record in the Citibank case and the Target case. Counsel for Target has conferred with counsel for American Electric Power Company, Inc., American Electric Power WR and Southwestern Electric Power Company and these parties are unopposed to Target's Motion. Counsel for Wal-Mart Stores, Inc., Wal-Mart Stores East, L.P., Wal-Mart Stores Texas, L.P., Sam's East, Inc., Sam's West, Inc., and Wal-Mart.com, Inc., advised that these Wal-Mart parties are opposed to Target's Motion. Counsel for Discover Financial Services, Inc. and Discover Bank advised that they are opposed to the Motion. As of the time of filing, counsel for T-Mobile USA, Inc. was not able to advise whether T-Mobile USA, Inc. opposes the Motion; therefore, it is assumed to oppose the Motion. Counsel for Target also attempted to confer with counsel for Plaintiff Ronald A. Katz Technology Licensing, L.P.; counsel for Defendants Centerpoint Energy, Inc., Centerpoint Energy Houston Electric LLC, and Centerpoint Energy Resources Corp.; and Defendant Whirlpool Corporation. These parties were unable to confirm whether they were opposed within the time frame required for the filing of this Motion; therefore their opposition is assumed.

/s/Sam Baxter
Sam Baxter

Exhibit E

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

RONALD A. KATZ
TECHNOLOGY LICENSING, L.P.,

v.

CITIBANK, N.A., et al.

§
§
§
§
§
§

NO. 5:05-cv-142-DF

JURY

RONALD A. KATZ TECHNOLOGY
LICENSING, L.P.,

Plaintiff,

v.

AMERICAN ELECTRIC POWER
COMPANY, INC., et al.

Defendants.

§
§
§
§
§
§
§
§
§

NO. 5:06-cv-00188-DF-CMC

JURY

TARGET'S EMERGENCY MOTION TO CONTINUE
MARKMAN HEARING SET FOR SEPTEMBER 20, 2006

Contemporaneously, on September 18, 2006, Target Corporation, Target Bank, and Target National Bank (collectively "Target") filed their Motion to Consolidate Solely for the Purpose of Claim Construction ("Motion"). For all the reasons stated in the Motion, Target respectfully requests that the Court continue the *Markman* hearing in the Citibank case which is currently set for September 20, 2006, so that Target may participate. Because Katz only recently filed the Target case (in which neither Target nor any of the other defendants have even filed an answer), Target needs time to analyze the claim construction issues so that it can fully present its proposed claim constructions to the Court. In this regard, Target also requests that the Court

enter an amended or additional claim construction schedule when all the defendants in the Target case have answered or otherwise responded to Katz's complaint so that Target may be heard on the claim construction issues before the Court renders its order on claim construction.

Dated: September 18, 2006

Respectfully submitted,

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Certificate of Service

The undersigned certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). As such, this document was served on all counsel who have consented to electronic service. Local Rule CV-5(a)(3)(A). Pursuant to FED. R. CIV. P. 5(d) and Local Rule CV-5(e), all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by U.S. mail and facsimile, on this the 18th day of September, 2006.

/s/Sam Baxter

Sam Baxter

CERTIFICATE OF CONFERENCE

Counsel for Target has attempted to confer with all counsel of record in the Citibank case and the Target case. Counsel for Target has conferred with counsel for American Electric Power Company, Inc., American Electric Power WR and Southwestern Electric Power Company and these parties are unopposed to Target's Motion. Counsel for Wal-Mart Stores, Inc., Wal-Mart Stores East, L.P., Wal-Mart Stores Texas, L.P., Sam's East, Inc., Sam's West, Inc., and Wal-Mart.com, Inc., advised that these Wal-Mart parties are opposed to Target's Motion. Counsel for Discover Financial Services, Inc. and Discover Bank advised that they are opposed to the Motion. As of the time of filing, counsel for T-Mobile USA, Inc. was not able to advise whether T-Mobile USA, Inc. opposes the Motion; therefore, it is assumed to oppose the Motion. Counsel for Target also attempted to confer with counsel for Plaintiff Ronald A. Katz Technology Licensing, L.P.; counsel for Defendants Centerpoint Energy, Inc., Centerpoint Energy Houston Electric LLC, and Centerpoint Energy Resources Corp.; and Defendant Whirlpool Corporation. These parties were unable to confirm whether they were opposed within the time frame required for the filing of this Motion; therefore their opposition is assumed.

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